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ABSTRACT

Designed as a resource book which can be used to supplement the regular curriculum by integrating one or more career education activities into regularly taught courses, this volume for grades 1 through 6 is one of a series of three manuals, one each for the elementary (grades 1-6), junior high (grades 6-9), and senior high (grades 9-12) levels. It is divided into three sections, Introduction, Activities and Instructions, and Resources. The Introduction describes how to use the manual and briefly discusses the goals of career education. Activities and Instructions, covering the majority of the document, presents ten career education activities for each of four subject areas: Social Studies, language arts, mathematics, and science. Each subject area includes an activities summary, introduction, sample week's lesson plans, cross reference, and a student activities section, which is prefaced by teaching prerequisites and objectives. (The cross reference identifies by number activities which treat particular occupational issues and jobs and activities which reinforce specific subject area topics and skills.) The Resources section, under separate headings, discusses the following three aspects of career education which should be considered in order to implement the activities most productively: Teacher objectivity in career education, liaison with the community, and effective teaching methods for career education. (TA)

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Career Education Activities for Subject Area Teachers

Grades 1 through 6

May, 1975

by

Jane Lawson and Peter Finn

NIE Contract Monitor Tory Cowles

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WHAT THE MANUAL IS

This manual contains activities on career education for use by instructors who teach:

- social studies (10 activities)
- language arts (10 activities)
- mathematics (10 activities)
- science (10 activities)

The activities in each subject area section are listed by a title and a capsule description at the beginning of each section and in an index at the end of the volume. The activities within each subject area section are organized very generally from less complex to more complex.

The manual is a unique volume because it provides exclusively for subject area teachers a variety of career education activities which:

- are representative of some of the best activities and ideas for activities that have already been developed, supplemented by activities developed solely for this volume;
- involve students in action-oriented exercises, such as field trips and simulations;
- treat affective and attitudinal issues involved in career choices, such as role modeling, as well as cognitive factors;
- provide detailed teaching instructions which, at the same time, promote maximum flexibility and adaptability.

The manual is designed as a resource book which you can use to supplement your regular curriculum by integrating one or more career education activities into the courses you teach. The volume is part of a series of three manuals, one each for the elementary, junior high, and senior high levels. Because there is an overlap in grade levels between manuals (the elementary manual is for grades 1-6, the junior high for grades 6-9, and the senior high for grades 9-12), some of the same activities appear in more than one manual.

HOW TO USE THE MANUAL

Read the Introduction. This section presents the goals of career education and discusses why it is important to integrate career education activities into traditional subject areas.

Read the introductory material that precedes the manual section appropriate to each subject area. There is a section for each major subject area—social sciences, language arts, mathematics, and science. This material discusses how you can integrate the activities into your subject areas in ways that achieve both career education goals and subject area goals.

Read the activities for your subject areas and select those activities for implementation which:

- will most interest and benefit your students;
- are most appropriate to your students' learning styles and abilities; and
- will help you best to achieve subject area objectives.

Read the three resources at the end of the manual for suggestions on:

- how to avoid sex, ethnic, class, political, and religious stereotyping of careers and jobs;
- how to identify and contact appropriate people, businesses, and groups in your community; and
- how to implement those instructional strategies, such as role plays, interviews and volunteer work, which are highly effective for teaching career education.

These resources can be of vital assistance to you in implementing the activities because they provide teaching suggestions specifically targeted to the needs of career education.

Feel free to use parts of activities or simply ideas from activities. You can also implement the activities with an entire class, with part of a class, or with an individual student as an independent study exercise. If you adapt an activity or find part of an activity particularly useful (or inappropriate), you and your students can help future users of the activity by recording your experience at the end of each activity in the space provided for Comments from Teachers and Students.

WHAT THE GOALS OF CAREER EDUCATION ARE

In a study* funded by the National Institute of Education, five general career education goal statements were identified after a review of the many career education definitions that exist. An attempt was made to narrow the range of goals to those which are feasible for schools to meet. The following definition is not meant to be final, but is offered as a concrete definition for you to agree with or react to. The five general goals are summarized below.

1. Career education should help match people's characteristics and desires with career opportunities available. This is particularly important because future jobs will require more specialized skilled workers than in the past and particularly difficult since the types of jobs available may change dramatically.
2. Career education should help students develop awareness of adult roles and capabilities. We need to provide more ways for youth to become involved with employed adults to help youngsters make the transition as smoothly as possible from unemployed dependents to employed adults.
3. Through career education, schools should both provide many diverse routes to traditionally rewarded masteries in school and recognize and develop other important interpersonal skills useful for career entry and progression.
4. Career education should help students to understand and to influence their economic-political-social system. Career education, by promoting awareness of the world of work as it actually functions, can help students learn how to use the social system constructively for their own benefit.
5. Career education should provide students with opportunities for both specialized occupational training and basic academic skills.

The activities in this manual are designed to help students to achieve the first four of the above five career education goals. More specifically, the activities are intended to assist students to develop:

- self-awareness of their own interests and goals;

**Career Education: The State of the Idea and its Prospects for the Future*, by Elliot Eisner, Joseph Schwab, and Decker Walker.

- awareness of what long-term career opportunities are available;
- awareness of what specific occupations involve; and
- career-relevant attitudes and skills, such as a positive self-image and the ability to make responsible decisions.

WHY TEACH CAREER EDUCATION

As a subject area teacher, you should consider career education as an integral and appropriate component of your course which will **increase your students' ability and motivation to learn the content and skills of your subject area.**

There are three ways in which integrating career education activities into your course can help you achieve your subject area objectives.

- In the process of learning about career opportunities and roles your students will learn a great deal about your subject area **topics** related to the career or occupation that they are studying. For example, if a student engages in a simulated political campaign he or she will learn a great deal about how our political system functions, an important social studies objective.
- Many of the **skills** in your subject area will be developed or reinforced through the use of career education activities. For example, if a language arts class designs, administers, and analyzes a poll of librarians or journalists, students will develop their writing, speaking, listening and interpretation skills.
- By including career education activities in your course, you will increase your students' **motivation** to study and learn about your subject area topics and to develop related skills. By studying careers in exciting, action-oriented ways, students will be stimulated to delve further into fields related to the occupations they are investigating. For example, mathematics or science students who study engineering as a career by interviewing engineers may want to learn more about the mathematics and scientific skills and knowledge required to become an engineer. In this manner, career topics have the attractiveness of **"relevance"** for studying and learning subject area content matter and skills. Activities dealing with concrete, current occupations of personal concern to your students can add motivation to the disaffected, as well as the involved student who wants to know what your course has to do with the world of an adult: "How can studying the principles of magnetism in science do me any good or get me a job?" is the unspoken query of many students today.

How can career education be integrated into your subject area so that career education and the subject both benefit?

Let's take as an example a social studies career education activity in which students observe and interview members of the local police and fire depatemnts. After the interview, the students draw up a list of a normal day's activities for either a police officer or firefighter. Conducting the interview and compiling the activity list will help students to become aware of these jobs as they really are. This is an important **career education** objective. A social studies teacher can also use this activity, however, in order to achieve a number of **social studies** objectives. For example, the activity can be introduced when students are studying community workers. By observing and interviewing police and fire personnel, the students learn about some of the public services provided by and for the community. The activity also provides for a simulation of the police officer as a law enforcer; thus, students come to understand the need for laws and how society protects its citizens. By combining career education and social studies objectives students will learn more about both careers and community workers and services than if each were studied in isolation, because each component of the activity deepens understanding of and interest in the other.

WHAT THE ACTIVITIES ARE LIKE

Four guidelines have determined the selection, development and revision of the activities.

Active Instructional Strategies

One highly effective method for learning about career education is for students to **do** and **observe** what people in various occupations themselves **do.** In addition, frequent contact with employed persons in the community provides students with occupational role models which they might otherwise lack. The manual has therefore included many activities which involve students in action-oriented exercises, such as role plays, games, peer teaching, experiments, computations, communication (reading, writing, conversing, listening), field trips, interviews and polls.

Affective Educational Approaches

Most career education curriculum materials stress the need for student awareness and exploration of alternative occupations and the selection of a career on a rational basis from among these options. However, many people do not choose careers solely or even primarily on a rational basis of awareness and experience. For these individuals, a purely cognitive educational approach is not sufficient to increase career options because they may select a career based on **nonrational** reasons, such as fear of responsibility, passion for glamour, emulation of or rebellion against a parent, an inflated or underestimated view of their own capabilities, or the influence of a single role model. Career education must help these students to identify and deal with their feelings about careers and jobs by providing activities that are specifically designed to encourage pupils to express and explore their feelings. Therefore, the inclusion of affective educational approaches has been an important focus of the manual.

Detailed Teaching Instructions with Flexibility

A third characteristic of the activities is that they provide the teacher with as much information as possible on how to implement them, without destroying their flexibility. It is still up to you to adapt them to your particular students, syllabus, school, and community.

Best Available Materials

The activities offered in the manual represent a unique combination of the most appropriate activities that other curriculum developers have produced along with activities developed by project staff especially for this volume. Initially, project staff conducted an extensive search for appropriate activities, reviewing 278 documents from 60 sources across the nation, including Educational Resources Information Center (ERIC), federal, state and local government agencies, universities, elementary and secondary school system, individual teachers, and informal sources such as newsletters and catalogs.* Those activities culled from outside sources were revised by project staff to meet the specific goals the manual is designed to achieve. These outside sources have been credited at the bottom of the first page of each appropriate activity.

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*Private publishers and other producers of copyrighted materials were not canvassed. In addition, many fine curriculum products were not used because the materials could not be adapted to the specific needs the manual is designed to meet. Finally, the activities search was extensive, but not definitive, so that some appropriate activities were no doubt overlooked.

The manual has been reviewed in part or entirely by many people. The activities were thoroughly reviewed for accuracy and useability by thirty-four subject area teachers. Several individuals also supplied the authors with useful resource documents. We are grateful for these comments and materials. These people, are, however, in no way responsible for errors, omissions, or biases in the manual. Thanks are given especially to Dr. Ferman Moody and Dr. Marla Peterson for spending several days carefully and productively critiquing earlier drafts of the manual. In addition, Peter Wolff, the Abt Associates quality reviewer for the project, likewise read the entire volume and provided helpful comments. Linda Wurm creatively developed the artistic work – illustrations, charts, and cover. Contributions were also made by Charles Grench, Donald Bockler, Peter Fellenz, Beatrice Paipert, and Julius Finn. Early and all but illegible drafts of the activities were typed with patience by Mary Stroud and Elizabeth Harmer. Deborah Greene and Katherine Scheller spent many hours typesetting the manual, while Roy Nelson handled the layout and design. Finally, we are happy to acknowledge the important contribution the NIE Project Monitor, Tory Cowles, made to the manual in terms of her helpful suggestions, ready assistance, and constant availability.

* * *

There is a brief questionnaire on the following page which we would appreciate your filling out and mailing after you have used the activities in your classes. The form will enable us to assess the need for revisions in the activities and the need for publishing additional volumes of career education activities for subject area teachers. Thank you.

YOUR OPINION OF THE ACTIVITIES MANUAL

This career education manual is unusual because it is designed for use by subject area teachers within their traditional discipline areas. As a user of this manual, you are something of a "pioneer" who could help us decide how to improve it and what kinds of new activities and manuals to develop. Please answer and return the following questionnaire. Thank you.

---

1. To what extent did you find the activities useful for:

	Highly Useful	Of Some Use	Not Useful
- helping students learn about career opportunities or skills needed to enter one or more occupations	☐	☐	☐
- teaching about your subject area (English, math, social studies, science, other)	☐	☐	☐
- helping students develop self-awareness and interpersonal skills that relate to career choice	☐	☐	☐
- providing enjoyable activities for your students	☐	☐	☐
- providing you with detailed instructions so you could implement the activities without much additional work	☐	☐	☐

2. How much preparation time did you have to engage in to teach the activities? (check one)

just the right amount of time ☐ too much time ☐ would have been willing to devote more time to preparation ☐

3. Would you use a similar activities manual that contained additional activities? (check one)

Yes ☐ No ☐

4. In what subject area(s) did you use the activities? (check all that apply)

Social Studies ☐ Math ☐ Science ☐ English ☐

Other ☐ (specify) ____________________

5. What is (are) the grade level(s) in which you used the manual? (circle all that apply)

K 1 2 3 4 5 6 7 8 9 10 11 12

6. Are your students: (check all that apply)

- members of minority groups
  - from rural areas ☐
  - from urban areas ☐
  - from suburban areas ☐
- behind grade level ☐
- slow learners ☐
- poor ☐
- middle-class ☐
- wealthy ☐
- college-bound students ☐

7. Please add any other comments you may have in terms of how this manual should be revised or what new manuals we should develop.

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ACTIVITIES AND INSTRUCTIONS

INTRODUCTION

Section One: SOCIAL STUDIES

1. ACTIVITIES SUMMARY

This section of the manual contains the following ten activities, sequenced very generally from easiest to most difficult.

1. **ASSEMBLE AND PRODUCE:** The class becomes an assembly line; each student is assigned a specfic task.
2. **CUT, PASTE, AND CRANK THAT CRANE:** Class makes a collage from pictures of construction workers, then simulates the job of a crane operator.
3. **HANGING TOGETHER:** Students make "mobiles" depicting various industries and jobs, and the people it takes to make them work.
4. **HELP! FIRE! POLICE!:** Class visits the local fire and/or police department, then role plays and discusses various situations based on the visit.
5. **GIVE THAT LETTER A HAND:** The class traces the path of a letter by visiting a local post office.
6. **OCCUPACS:** Students make their own occupational learning kits for class use.
7. **HOME IS WHERE THE HOMEMAKER IS:** Students observe and interview their family homemaker, gather data, and draw conclusions about this occupation.
8. **JOB BANK:** The class compiles a "job bank" based on interviews with parents.
9. **"GOOD NIGHT, CHET," "GOOD NIGHT, DAVID":** The class studies television news format a and uses it to present current events.
10. **TAKE A TRIP:** The class solves a travel problem acting as a travel agent or tour guide, then role plays the various solutions.

2. INTRODUCTION

As a social studies teacher at the elementary level, you should consider career education as an integral and appropriate component of your teaching which will **increase your students' ability to learn social studies content and skills.** Moreover, since social studies is concerned with the students' relationship to their environment, you are in an excellent position to integrate career education activities into your curriculum. In addition, you have the flexibility to incorporate career education activities into your classroom because social studies offers a wide variety of areas of study (family, school, community, town, state, country, geography, comparative cultures, etc.).

How will the integration of career education activities into your social studies courses help you achieve social studies objectives? There are at least four answers to this question.

1. While engaging in the career education activities provided in this manual, your students will learn a great deal about social studies **topics** related to the career or occupation they are studying. For example, if a student learns about what it is like to be a farmer, he or she is also going to learn a great deal about his community's source of food. In short, learning about careers in fields related to social studies automatically involves learning about social studies **subject matter.**
2. Many of the **skills** in the social studies curriculum will be developed or reinforced through the use of career education activities, including such skills as decision-making, interpretation, and drawing analogies. For example, if your class designs, administers, and analyzes a poll of members of a particular occupation, the students will be developing their interpretation and analytical thinking skills.
3. Many of these activities add a real-life or simulated component to your classroom teachings about social studies. As such, role plays, simulations, and field trips aid in student identification with the **ideals** and **values** that you are trying to teach. The student who has the opportunity to act as both "boss" and "worker" in a role play situation, better comprehends the need for understanding and cooperation among people.
4. Career topics have the attractiveness of **"relevance"** for studying and learning social studies content matter and skills. Activities dealing with concrete, current occupations of personal concern to your students can add motivation to the disaffected, as well as the involved, student who wants to know what social studies have to do with the world of an adult. By including career education activities in social studies, you bring the world outside your classroom inside. School, and social studies in particular, becomes more in tune with the world and better able to prepare the student for it.

How can integration of career education with social studies operate in practice? Let us look briefly at a hypothetical Sample Week's Lesson Plan to see how elementary level teachers can integrate career education activities into their curriculum.

3. SAMPLE WEEK'S LESSON PLAN

The example of a week's lesson plans on the following page is applicable to an elementary level social studies unit on the community and specifically on society's need for shelter. The lesson plans presume that the students have already covered and discussed what is a shelter, who needs shelter and why. Homework assignments in the lesson plans refer to work assigned that night and due the next day.

You have come to the point of discussing who constructs buildings and with what materials, and would would like to focus on the construction worker and the part he or she plays in the building process.

Career education Activity #2 would be appropriate at this time and can be integrated into days three and four of the week. The activity increases student awareness of careers in the construction industry, thereby achieving a career education objective. The students will also better understand the value of the worker to the community, and by participating in the activity's simulation exercise will recognize the necessity for people to work together to achieve a product -- two important **social studies objectives.**

There are several places Activity #2 can be integrated into the curriculum. It can be used when studying how communities change and modernize; as an example of the worker in an industrialized society; or simply as an exercise for motor coordination.

As you integrate some of the other activities in your lesson plans, adapt them, too, in any way that seems useful, but keep in mind their essential purpose: to help students become aware of the various career paths open to them, what is required and involved in different occupations, and the relevance of school to life both now and later.

SAMPLE WEEK'S LESSON PLANS

(An illustration of one way to integrate a career education activity into your course.)

HOMEWORK ASSIGNMENT	DESCRIPTION OF CLASS ACTIVITY	
Students make a list of the different materials used to build their homes.	• Class discusses various kinds of shelters and their uses • Students draw a shelter they use that is not their home • Students discuss how the purpose of a shelter can determine what it is made of: - why is a tent made of canvas and not wood? - why is a summer cabin not insulated from the cold? - why is an office building made of steel and not wood?	Day 1
Students cut out of old magazines, pictures of construction workers - especially those who use large equipment.	• Class discusses how a building is constructed - workers - materials - machines/equipment	Day 2
	• In pairs students make small collages from their pictures of construction workers. • Collages hung together to make one large collage. • Letters are cut to form the names of the different workers and placed on the bulletin board.	Day 3
	Pre-Simulation: • Class discusses what it would be like to be a construction worker. • In groups the class simulates a crane operator using a rod, string and magnet as the crane. Post-Simulation: • Students discuss what they now think it would be like to be a construction worker. (Activity #2)	Day 4
Students draw a picture of their house and one their great, great grandmother would have lived in.	• Class finds out where we get building materials. • Students compare a house of today with one built 200 years ago.	Day 5

4. CROSS REFERENCE

The cross reference below identifies by number activities which treat particular occupational issues and jobs (listed across the top of the page) and activities which reinforce specific social studies topics and skills (listed down the left-hand margin of the page). By using the reference, you can locate activities by specific jobs or occupational issues which you feel are relevant points in your curriculum at which to introduce a study of careers.

CROSS REFERENCE

OCCUPATIONAL FOCUS / TOPIC OR SKILL	Assembly Line Worker	Cafeteria Worker	Construction	Firefighter	General Career Awareness	Homemaker	Janitor	News Reporter	Police Officer	Postal Service	Secretary	Tour Guide	Travel Agent						
American History	1									5		10	10						
Citizenship					8														
Communication	1	6	2	4	3 6 8	7	6		4	5	6								
Current Events								9											
Economics	1																		
Family		6			6 8	7	6				6								
Geography												10	10						
Government				4					4										
Industrialization	1																		
Laws				4					4										
Map Reading												10	10						
Transportation												10	10						
Working Together		2			3														

must be speeded up. Request that in the next few minutes the groups produce X (a number beyond the capabilities of your students) Valentine Cards. At the end of the allotted time period, stop production and compare the first series of cards with those of the second series.

Ask the following questions of the class:

- Which is the better product and why?
- At which pace did you feel more comfortable?
- Which product are you more proud of?
- What could the company do to make more and better cards?

This time, tell the workers that the company now thinks people are not going to buy as many Valentine Cards this year as the company had planned to produce. Work continues as usual but the assembly line is turning out fewer cards. The workers are to make X (a number far less than what your students can easily produce) cards over the next few minutes. At the end of the time period, stop production and ask the following questions:

- Is there any difference between the last cards produced and the ones that first came off the assembly line?
- Of the three assembly lines, which one would you prefer working on? Why?
- Is the company wasting money the way the last assembly line was run? What could the company do?
- How would you feel if you were "laid off" the assembly line? (To make this point, lay off, at random, one whole assembly line. Ask the class to react to this situation.)

As a final exercise, the workers who were laid off retreat to corners of the room to individually make cards. The remaining assembly lines each decide on the most efficient mode of operation for their work (i.e., 1 person stencils and cuts, 2 people write greetings; use old method; etc.), then continues production. Again after a few minutes stop production and compare the assembly line cards to the "hand-crafted" cards both for quality and quantity. After comparisons have been made, ask the class the following questions.

- What advantages, if any, do hand-crafted cards have over ones made on an assembly line?
- Why do you think an assembly line is used in many businesses? Does it have any advantages over making cards by "hand?"
- Why do you do the same thing over and over working on an assembly line?
- Do you think you would like to work on an assembly line? Why?

Useful Prior and Subsequent Activities:

- Class takes trip to local plant or factory that utilizes an assembly line.
- Invite a parent to class who works on an assembly line to tell the students about his or her job.

Resources:

Books:
- *Come to Work With Us in the Toy Factory,* Jean and Ned Wilkerson
- *Urban Living Series:* "You Visit a Bakery – Spaghetti Factory," Benefic Press, 1900 N Narragansett Street, Chicago, Illinois 60639

Activity #1

Comments From Teachers and Students After Using the Activity:

OCCUPATIONAL FOCUS:

- Assembly line worker

SOCIAL SCIENCES RELEVANCE:

- Community Worker
- American History
- Industrialization
- Economics

Activity #1

Subject Area:

Social Studies

ASSEMBLE AND PRODUCE

***Capsule Activity Description:**

The class becomes an assembly line; each student is assigned a specific task.

Teaching Prerequisites:

materials: colored construction paper (4" x 8"), crayons, pens, pencils, scissors, stencil of a heart, any other appropriate materials
contacts with community: none
approximate preparation time: 15-30 minutes
approximate class time: 1 class

Social Studies Objectives:

to recognize the place of the blue collar worker in society;
to realize the dependence of one person on another.

ACTIVITY

This activity gives your students an opportunity for "hands on" experience as an assembly line worker. This particular worker plays an integral part in the structure of the economy of the United States and is largely responsible for adding to the comfort and convenience so often found in American life. Jobs like this are numerous and an awareness of this and similar occupations is important for the student to have a complete picture of the world of work.

---

*The core idea for this activity came from an activity developed by S.B. Hirni. We are grateful for permission to use it. The original activity is found in *Learning* Magazine, Education Today Company, Inc. (Palo Alto, California: December 1973, Vol. 2, No. 4).

Activity #1

The integration of this activity can occur at several places in the social studies curriculum.

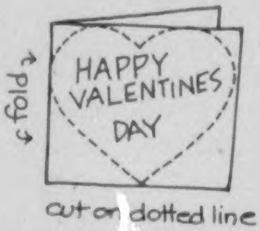
- In a unit on the community, this activity shows the nature of work carried out by a significant portion of the community work force, and the dependence one worker has on another and society's dependence on them all.
- This activity lends itself to the study of the industrialization of America by involving the student in actual production processes.
- This activity may also be used to learn about the economy and the ways the economy and production affect each other and the worker.

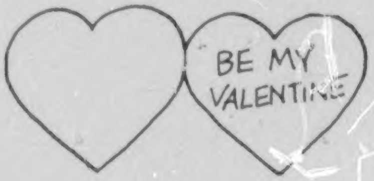
This activity can serve many purposes and can be revised to suit a number of needs. As described below it is used to produce Valentine Day Cards, but it can be used for other holidays and for things other than greeting cards (i.e., flowers, baskets, toys, etc.)

Divide the class into groups of seven. Draw a sample of the Valentine card on the chalkboard. (See diagram below)

Assign jobs: (Each worker has on his or her desk the materials that appear in the parenthesis after the corresponding job title –– additional materials can be added if desired.)

1. "Folder" (stack of colored construction paper cut into rectangles, 4" x 8")
2. "Outliner" (heart stencil, pencil)
3. "Cutter" (scissors)
4. "Writer 1" (crayons, pen)
5. "Decorator 1" (crayons)
6. "Writer 2" (crayons or pen)
7. "Decorator 2" (crayons)





The assembly line works as follows.

1. "Folder" folds piece of construction paper, passes it to #2.
2. "Outliner" places stencil on construction paper (see diagram), outlines it, passes construction paper to #3.
3. "Cutter" cuts the heart out of the construction paper, leaving the fold, passes the heart to #4.
4. "Writer 1" prints or writes "Happy Valentine's Day" on the front of the card, card passed to #5.
5. "Decorator 1" decorates front of card, passes it to #6.
6. "Writer 2" prints or writes short verse inside (Be My Valentine), passes it to #7.
7. "Decorator 2" decorates inside of card, places it in pile next to him or her.

And the process repeats itself as in an assembly line.

Remind the workers that their work should not vary from card to card but remain as uniform as possible.

After the groups have been working at their own rate of speed for a few minutes, tell them at the company they are working for thinks there is going to be a shortage of Valentine cards so production

OCCUPATIONAL FOCUS:

- Careers in Construction
- Large Equipment Operators

SOCIAL STUDIES RELEVANCE:

- Community Workers
- Working Together
- Recognizing Authority

Activity #2

Subject Area:

Social Studies

CUT, PASTE, AND CRANK THAT CRANE

Capsule Activity Description:

Class makes a collage from pictures of construction workers then simulates the job of a crane operator.

Teaching Prerequisites:

materials: magazines, newspaper, scissors, paste, paper, crayons, rods, string, magnets
contacts with community: none
approximate preparation time: 30 minutes–1 hour
approximate class time: 2-2½ classes

Social Studies Objectives:

to acquaint the student with the role of the worker in the community;
to recognize that people must work together and with authority.

ACTIVITY

This activity has two parts: (1) students draw or cut out of magazines pictures of construction workers to make into a classroom "work" collage; and (2) students participate in an exercise that simulates the jobs of crane operator and supervisor. Along with providing students with an increased awareness of the occupation of construction worker, the activity reinforces skills necessary to successfully and productively work as a member of a group, both in a supervisory and subordinate role. Thus, the activity can not only be integrated into a unit on the community to illustrate various workers and trades, but it also can stand alone as an activity to enhance the overriding social studies objective of preparing students to live and work in the world.

Activity #2

Provide the class with magazines and any other available sources of pictures. In pairs, the students cut out and/or draw pictures of construction workers, especially large machine/equipment operators. The pictures are pasted onto a piece of construction paper to form a collage. When all have been completed, they are placed together on a bulletin board to make one large collage.

Still in pairs, students cut letters from a magazine or newspaper to spell out the name of a worker who appears in their collage (e.g., bulldozer operator, crane operator, carpenter, mason, welder, etc.). Using the letters, list the workers' job title to one side of the collage. The various occupations depicted are then discussed according to the following:

- nature of the work performed
- working conditions
- hours of work
- training

To simulate the work of a large equipment operator, divide the class into groups of three. Provide each group with a rod that has a magnet attached to it with a piece of string (similar to a fishing rod). This is the crane. One student in the group acts as "boss" while another takes a turn as the crane operator —— each student has a turn as both boss and crane operator.

A pile of objects (things that can be picked up with a small magnet: paper clips, staplers, staples, scissors, eating utensils, keys) sits on the floor in the middle of the group. The boss tells the crane operator which objects he or she wants picked up and where they are to be moved. The operator must move the entire pile of objects but only at the direction of the "boss." The pile of objects should be large enough so the student recognizes the pressure the cane operator is under as well as the tedious nature of the job. The student who is waiting a turn is told he or she is a truck driver, waiting for the crane operator to load or unload his or her truck.

The truck driver times each crane operator. The operator in the group who moves the pile most quickly and without incident is the winner and "gets a raise."

A discussion follows the exercise covering these points:

- What kind of person would be a good crane operator?
- What kind of training, if any, would a crane operator need?
- What would you tell someone who wanted to be a crane operator about the job as you experienced it today?
- Would you rather be the boss or the crane operator? Why?
- Have you ever seen a woman construction worker? Could a woman get a job as a construction worker? Could she do the work? What would the other construction workers think if they worked with a woman?

Useful Prior and Subsequent Activities:

- See Activity #14.
- You can invite a construction worker to class as a guest speaker.
- The class can visit a construction site, both to observe the work in progress and the people working together to complete a project.

- Students can compile a scrapbook of different kinds of workers and their machines; workers who wear uniforms; people who work out-doors, etc. to add to a career education library.

Resources:

- King Comic Series for Career Education
  "Popeye and Construction Careers"
- Magazines can be obtained from doctors offices as well as brought in from home by students and school personnel.

Books:

- *Tools for Building,* Jerome Leavitt, Children's Press, 1224 West Van Buren Street, Chicago, Illinois 60607
- *The Big Book of Real Building and Wrecking Machines,* George J. Zaffo, Grosset & Dunlap, Inc., 51 Madison Avenue, New York, New York 10010

Films:

- "Machines that Move Earth," Film Associates, 11014 Santa Monica Boulevard, Los Angeles, California 90025

Comments From Teachers and Students After Using the Activity

OCCUPATIONAL FOCUS:

- General Career Awareness

SOCIAL STUDIES RELEVANCE:

- Community Workers
- Working Together

Activity #3

Subject Area:

Social Studies

HANGING TOGETHER

***Capsule Activity Description:**

Students make "mobiles" depicting various industries and jobs, and the people it takes to make them work.

Teaching Prerequisites:

materials: string, construction paper, cardboard, crayons, scissors, strong wire or coat hangers
contacts with community: none
approximate preparation time: 1 hour
approximate class time: 2 classes

Social Studies Objective.

to recognize the role of the worker in the community and to understand the importance of people working together.

ACTIVITY

This activity can be integrated as a summary exercise into a unit on community workers. It presumes that students are familar with various industries and the people who work within them, as well as understand the importance of people working together. To illustrate the above, students make mobiles.

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*This activity has been revised from an activity developed by Lee Laws. We are grateful for permission to use it. The original activity is part of *Elementary Guide for Career Development, Grades 1-6*, Education Service Center, (Austin, Texas: 1970) which may be ordered from Education Service Center, Region XIII, 6504 Tracor Lane, Austin, Texas 78721 for $5.00.

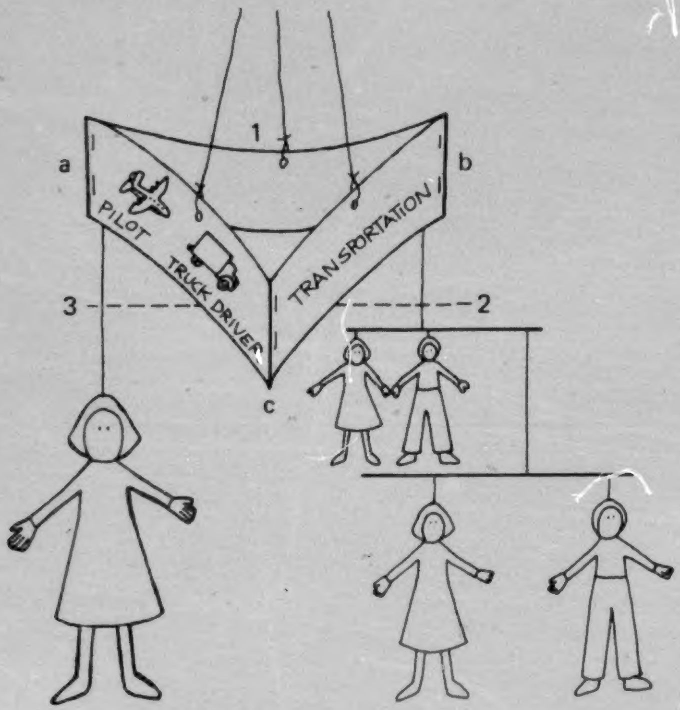
Activity #3

Students of various ages find mobiles fun and easy to make. In this instance students make a two part mobile: The upper section or support depicts a job cluster and several occupations related to it; the bottom section or hanging portion shows how workers support and "balance" each other.

- Write several job cluster headings on the chalkboard, preferably ones you have studied. Together with the class list as many job titles as possible that fall under the cluster headings (see attached list).
- Students, working alone or in pairs, choose a job cluster to work with for their mobiles.
- Distribute to each student three strips of cardboard or tagboard cut into 3" x 10" lengths.
- On the strips students illustrate the workers within their job clusters. Students print the cluster headings somewhere on the mobile.
- When the strips are illustrated, they are attached (glue, staples) at points a, b, and c (see diagram).
- People of various shapes and sizes are cut from colored construction paper. They can be decorated in attire appropriate to a job within the cluster or left as is.

The primary focus of this portion of the mobile is to depict the way people relate to each other in their work.

- The people are attached to different lengths of string and wire, and balanced from the support.



Ask for volunteers to describe their mobiles to the class, telling the name of the job cluster, the occupations illustrated, and how people should work to be most productive and efficient.

Hang the mobiles from different spots around the room.

Discuss with the class the following:

- Of the occupations that appear on your mobiles, which one interests you the most? Why?
- Choose another occupation. Why would that one interest someone else?
- When students are assigned classroom jobs (e.g., plant watering, erasing and washing chalkboard, passing out paper and tidying drawers, etc.) and someone does not do his or her share, what happens? How do you feel toward that student?
- What is responsibility? What are your responsibilities at school? at home?

Useful Prior and Subsequent Activities

- Students can write a short poem or story or draw a picture about the jobs on their mobile and the people working together to balance it.
- Students can outline each other on brown paper and color or paint themselves in the attire of an occupation they might like when they are older.

Resources:

Books:
- **When I Grow Up,** Lois Lenski, Lippincott Co., East Washington Square, Philadelphia, PA 19105
- **What Could I Be?,** Science Research Associates, 250 East Erie Street, Chicago, Illinois 60611

Filmstrips:
- "City Workers Series," Curriculum Materials Corporation
- "Community Helpers," Eye Gate House, Inc., 146-01 Archer Avenue, Jamaica, New York 11435
- "Our Neighborhood Helpers," and "Our Community," Scott Education Division

Game:
- Job Cluster Game, Handbook for Occupational Awareness, K-2, Houston Independent School District, Houston, Texas

Transparencies:
- "Specialization and the Resulting Interdependence of People," Occupational Division of Labor, Western Publishing Company, 850 Third Avenue, New York, New York 10022

Comments From Teachers and Students After Using the Activity:

Activity #3

PUBLIC SERVICE:

- Mail Carrier
- Police Officer
- Firefighter
- Soldier
- Mayor
- Garbage Collector
- Public Health Nurse

TRANSPORTATION:

- Baggage Clerk
- Pilot
- Truck Driver
- Mechanic
- Train Conductor
- Locomotive Engineer
- Ship Captain

MANUFACTURING:

- Laborer
- Machinist
- Chemist
- Welder
- Inspector
- Glass Blower
- Baker
- Sewing Machine Operator
- Mathematician

NATURAL RESOURCES:

- Farm Worker
- Tractor Operator
- Soil Scientist
- Miner
- Fisher
- Ship Engineer
- Marine Biologist
- Forest Ecologist
- Fire Warden

RESOURCES – CONTROL AND CONSERVATION:

- Ecologist
- Tree Planter
- Oceanographer
- Landscape Architect
- Inspector
- Chemist

COMMERCE AND TRADE:

- Typist
- Computer Operator
- Accountant
- Bank Teller
- Loan Officer
- Sales Clerk
- Buyer
- Motel Owner
- Chef
- Barber
- Funeral Director

COMMUNICATION AND MEDIA:

- Telephone Operator
- Repairman
- Lineman
- TV Announcer
- Program Director
- Sound Effects Person
- Special Effects Person
- Film Splicer
- Musical Director
- Publisher/Printer
- Advertiser

CONSTRUCTION:

- Laborer
- Architect
- Carpenter
- Surveyor
- Engineer
- Machine Operator

PERSONAL DEVELOPMENT AND RECREATION:

- Library Stacker
- Librarian
- Bookmobile Driver
- Archeologist
- Recreation Aide
- Counselor
- Travel Guide
- Forest Ranger
- Park Superintendent

CREATIVE ARTS:

- Artist
- Photographer
- Stage Hand
- Set Carpenter
- Actor
- Director
- Musician
- Music Teacher
- Conductor

HEALTH, FAMILY AND PUBLIC WELFARE:

- Nurse
- Doctor
- Hospital Aide
- Dietitian
- Hospital Director
- Laboratory Technician
- Pharmacist
- Dentist
- Dental Hygenist
- Therapist

EVALUATION, TRAINING AND RESEARCH:

- Teacher
- Professor
- Counselor
- Research Assistant
- Scientist

OCCUPATIONAL FOCUS:

- Firefighters
- Police Officers

SOCIAL STUDIES RELEVANCE:

- Community Workers
- Laws
- Government

Activity #4

Subject Area:

Social Studies

HELP! FIRE! POLICE!

***Capsule Activity Description:**

Class visits the local fire and/or police department, then role plays and discusses various situations based on the visit.

Teaching Prerequisites:

materials: none
contacts with community: visit to local fire and/or police department
approximate preparation time: 1-1½ hours
approximate class time: 2-2½ classes

Social Studies Objectives:

to introduce the students to particular community workers and to recognize their place and need in the community;
to become aware of the need for laws in society and how they are used to protect citizens.

ACTIVITY

Police and fire department personnel are obvious and prominent workers in most communities and students, especially at the elementary level, are often very attracted to them. For this reason this is an especially good time for your students to learn about the services these people perform, their working conditions, and the reasons the community relies so heavily on these workers. Because the fire and police departments are so closely aligned to the community and our way of life, there are several points at which this activity may be integrated into your social studies curriculum.

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*This activity has been revised from an activity developed by Dr. Marla Peterson, et al. We are grateful for permission to use it. The original activity is part of *Coping Behaviors Dimension Guide, K-6 Career Education,* U.S. Office of Education, Department of Health, Education and Welfare (Washington, D.C.: 1974). Materials will be available soon.

Activity #4

- This activity may be used in a unit on community workers, to explore and demonstrate the community's need for good police and fire personnel.
- While studying laws and/or government, this activity shows the ways in which society protects its citizens and how it does so. In this regard, the activity can lead into a discussion of why we have laws, how they differ between societies, different ways laws are upheld, and the various services provided by governments for their citizens.

Arrange for your class to take a trip to the fire and/or police stations so your students can see and talk to these people in their work environment. If contacting those departments directly does not seem feasible, you might try using as your intermediary your principal or some other appropriate school personnel who deals or has dealt with the local fire/police departments. A parent employed by one of the departments or the local traffic officer in front of the school building might also prove helpful to you in arranging this trip.

In many, if not most, towns and cities, the fire and police stations are situated so that a trip to both on the same day can be easily accomplished. If, for some reason, this cannot be done, an equally good alternative is to visit one department and invite a member of the other department (preferably a parent) to class. It is always beneficial for students to see a parent at work, so the extra effort involved in scheduling a trip around the working hours of a parent or getting one to come is well worth it.

Before you leave on your trip or prior to the arrival of your guest speaker, break the class up into small groups of 3-5 students for the purpose of brainstorming. The groups gather questions they would like answered about the occupations of people employed by the fire and police departments. At the end of the brainstorming sessions (5-10 minutes), each group recorder reads aloud his or her group's questions. The questions are put on the chalkboard and discussed, selecting out the best ones for the class to ask the fire and police personnel. Sample questions follow:

- Did you have to go to a special school to be a firefighter?
- Do you ever get bored at your job?
- Is being a police officer dangerous work?
- Do you always wear a uniform at work? Why?

There may well be a number of important questions that your students will not think of in their brainstorming sessions. You might want to bring the following types of questions to your students' attention for discussion.

- Why are women police officers usually only seen directing traffic?
- Could a woman be a firefighter?
- Would someone your grandparents' age make a good police officer?
- If you were a police officer who just got "laid off," what other kind of work could you do?

The field trip or special class session is to give your students the opportunity to ask questions and learn about people who are firefighters and police officers, and to find out:

- What police officers and firefighters really do while working.
- What they are really like as people.

- The answers to the myriad of questions that have been prepared prior to the special class period and those that "pop" into your students' heads while talking to one of these community workers.

After this class session, the students make up an activity chart for a particular individual they observed while on their trip or for the guest speaker, that would typify a normal working day. An activity chart is a list of the day's activities in chronological order.

Sample: Firefighter
gets up
gets dressed
eats breakfast
goes to the firestation
checks the gas in fire truck and fills it up
washes truck
eats lunch
starts to write up his notes from previous evening's training meeting
goes to false alarm
back at station, finishes notes
goes home

The activity charts are read, discussed and compared in light of what was learned about these occupations.

- Are these jobs as exciting and dangerous as you thought before you went on the field trip?
- Are these services necessary to our community's well-being and safety?
- How do police officers uphold the law?
- Did you see any women firefighters? Did you see any women at all at the fire or police stations?
- Why do you think someone would want to be a police officer or firefighter? Would you want to be one?

To further understand the role of the police officer in the community as an enforcer of laws, a simple simulation can be enacted.

- As a class, decide on a common rule that in some way affects the normal routine. For example, returning materials to their proper place, i.e., scissors to the scissors box, staplers returned to drawer, etc.
- The class selects 2 or 3 students who are responsible for these materials. Comparisons are drawn between these students and a police officer protecting common property.
- The number of scissors is posted on the box and rules established as to when scissors may be used and when they must be in the box.
- At a specific and convenient time during the day the scissors are accounted for. If they are not all there a search procedure is decided upon.
- Each student searches his or her own desk while the "police" stand by and watch. All scissors found are returned voluntarily. The students note that laws protect an individual's property from indiscriminate search.

Activity #4

- Advise the "police" and the students that no desk can be searched without permission of the "owner" or the teacher.
- If the lost scissors are not found, a written record is kept and attached to the side of the box.
- Discuss as a class:
  - the inconvenience of lost property;
  - the role of the police in protecting property;
  - why there are laws.

This simulation can be carried out over a period of a week (longer if desired) so that all the students have the opportunity to act as police officer.

Role plays can also be used here to point out various aspects of these jobs that students do not often see. A sample role play follows:

Ms. Taylor: You wish this fire chief would hurry up and see you. He has kept you waiting for almost an hour. Your resume wasn't so long that he couldn't have read it by now. You must admit that it is a good resume and the fire chief should be impressed. You have been to the fire academy and to forest rangers' school and graduated at the top of your class both times. You desperately want this job –– the fire chief must hire you.

Fire Chief: What does this Miss Taylor want? She can't be applying for the fireman's job. She's a woman! You wish you didn't have to interview her –– if this were the "old" days you could just tell her to go home and learn to type like a good girl. But today –– all those silly new laws make you do things that waste your time . . . Oh rats! Look at this resume! She really is qualified to be a *fireman*. But I can't hire her –– I would be laughed right out of the next fire chief's bowling tournament.

After discussing this role play, the way it was handled by students participating and its implications, bring up the following points for further discussion, if not already dealt with by the class.

- Why was Ms. Taylor discriminated against?
- Why do we have laws?
- What is peer pressure? Have you ever felt it?

Useful Prior and Subsequent Activities:

Prior:
- Review vocabulary related to this activity:
  - discrimination
  - peer pressure
  - uphold
  - resume
  - laid off
  - overtime
  - strike
  - interview

Resources: Local newspapers often have regular articles on activities of Police and Fire Departments (i.e., robberies, fires, deaths, etc.)

Filmstrip:
- "Fire Department Workers," Society for Visual Education, Inc., 1345 Diversey Parkway, Chicago, Illinois 60614

Comments From Teachers and Students After Using This Activity:

Activity #5

Subject Area:

Social Studies

GIVE THAT LETTER A HAND

OCCUPATIONAL FOCUS:

- Careers in the Post Office

SOCIAL STUDIES RELEVANCE:

- Community Workers
- Communication
- History of American Postal Service
- Geography

Capsule Activity Description:

The class traces the path of a letter by visiting a local post office.

Teaching Prerequisites:

materials: paper, envelopes, die
contacts with community: visit with local postal office staff
approximate preparation time: 1-1½ hours
approximate class time: 2½-3 classes (plus free time)

Social Studies Objectives:

to develop an awareness of postal workers as part of the community work force;
to understand how mail travels;
to explore one form of communication.

ACTIVITY

This activity deals with the postal system from two perspectives. One, it recognizes the post office as a large employer and an available source of jobs. Second, it points out the important service the post office performs in moving the mail –– a necessary means of communication in our society. Looking at the activity in those terms, its points of integration into the curriculum become quite apparent.

- When studying the community, use this activity to familiarize your students with an important segment of the local working population.
- This activity might also be used to bridge the gap between the past and present when studying the history of the American postal system.

Activity #5

- The activity can be integrated into a geography unit to explore how the zip code system, using geographical boundaries, helps expedite the mail.
- The letter is an important form of communication; along with knowing how to write a letter, one should understand how it travels. This activity moves in both those directions.

Arrange for a field trip to the loal post office. In some cases this will be a large building filled with hundreds of workers, in other cases it will be one or two rooms filled with an equally small number of employees. Depending upon your situation you may find yourself having to do somewhat more work to supplement this activity in the way of providing photographs, filmstrips, etc. so that your students fully understand the magnitude of the postal system. If a parent who works at the postal office is available, contact him or her for assistance in planning your trip. Parents are always a valuable resource in the community and should be used whenever possible. They are usually willing to offer their help.

Introduce the activity by having your students write a letter to a member of their immediate families. In the letter the students tell that person that they are going on a field trip to the post office to find out how the mail is moved from place to place and who handles it. They will trace the paths of the letters from school, where they are being written, to homes, where they are being sent.

The day of the field trip the students address their envelopes -- not forgeting the zip code -- and take them to the post office. Each student purchases a stamp at the postage window, affixes it to the envelope, and drops the letter down the mail chute. The class then tours the post office. As many postal workers as possible, doing different jobs, briefly speak to the class about the work they perform and the various postal systems (i.e., zip code, classes of mail, etc.) used to move the mail.

Back at school the students pick a friend in the classroom to write to at their home address. (It is hoped that each student will receive a letter.) The students pretend they are postal workers writing to a friend telling him or her about their job at the post office. For example, the students could write about one of the following:

- your first day on the job
- a funny thing that happened (the day a person tried to mail a live chicken named Fred; the day none of the stamps would stick; or the day the boss lost the keys to all the mail trucks)
- the day your best friend at the post office was fired
- the day the computer mixed up all the zip codes.

The letters are put in envelopes, addressed, stamped and mailed from a nearby mail box.

Give That Letter a Hand

The game that accompanies this activity serves to reinforce the understanding of the route a letter takes from mailbox to mailbox. It is played by 2-4 players during free-time. The object of the game is to move the letter from the place it is mailed (start) to the place it is going (end) the quickest way

Materials:

1 game board (included)
4 "letters" or game pieces (not included)
    suggested game pieces: paper clip, chalk, stone, safety pins, or students can make their own "letter" playing pieces

8 "Stamp" cards (included)
1 die (not included)

Procedure:

- Each player chooses a small available object for his playing piece.
- Each player rolls the die once. The player rolling the highest number goes first, the next highest second, and so forth.
- The players move their playing pieces the number of spaces rolled on the die.
- When a player lands on a "Buy a Stamp" space he or she draws a card from the stamp pile. He or she reads it aloud and moves accordingly.
- When a player lands on a "special" space as marked on the board, he or she reads what it says aloud and moves accordingly.
- The first player to get his or her "letter" to the Smiths' mailbox is the winner.

Useful Prior and Subsequent Activities:

Prior:
- Students are given cards with fictitious names and addresses printed on them in jumbled fashion. Students must put them together to form a proper address.
- Class reviews vocabulary related to post office.
  - zip code
  - sorter
  - strike
  - special delivery
  - first class
  - air mail
  - parcel post

Subsequent:
- Students write letters to parents telling about the field trip and pointing out rules to remember when sending a letter by mail.
- Students explain zip code system and other postal systems to another class.
- Students, working individually or in pairs, make their own game boards and "Buy a Stamp" cards for "Give That Letter a Hand" game.

Resources: Request information from local or large city post office.

Books:
- *How we Get Our Mail,* Edith McCall, Benefic Press, 1900 N. Narragansett Street, Chicago, Illinois 60639
- *At the Post Office,* Lillian Colonius, Melmont Publishers Inc., 1224 West Van Buren Street, Chicago, Illinois 60607
- *Our Post Office and Its Helpers,* O. Irene Servey Miner, Children's Press, Inc., 1224 West Van Buren Street, Chicago, Illinois 60607

Activity #5

Comments by Teachers and Students After Using This Activity:

OCCUPATIONAL FOCUS:

- Secretary
- Janitor/Custodian
- Cafeteria Worker
- General Occupational Awareness

SOCIAL STUDIES RELEVANCE

- Community Workers
- Family

Activity #6

Subject Area:

Social Studies

OCCUPACS

***Capsule Activity Description:**

Students make their own occupational learning kits for class use.

Teaching Prerequisites:

materials: camera(s), tape recorder(s) (all optional)
contacts with community: interviews with parents, school secretary/janitor/cafeteria worker (or other accessible personnel)
approximate preparation time: 1-2 hours
approximate class time: 2½ - 3 classes

Social Studies Objectives:

to develop an understanding of the place of the worker in society;
to recognize the need to work together to effectively make a product and/or perform a service.

ACTIVITY

This activity has been designed for older elementary school students but with modification it can be used equally well in the lower grades (see primary level option at end of activity). The students learn first hand about a member of the school community, make up classroom learning kits, and share their experiences with each other through these kits. Although the occupations are diverse in nature, they allow the students to gain an awareness of how people must work together to keep a community (of any size) functioning smoothly.

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*This activity has been revised from an activity developed by Fran Bierly and Cheryl Fuzzell, based on Dr. Marla Peterson's OCCUPACS. We are grateful for permission to use it. The original activity is part of *Project People of Peoria: Career Awareness and Exploration*, Peoria Public Schools, District 150 (Peoria, Illinois: 1972). Dr. Peterson's OCCUPACS will be available soon.

Activity #6

Putting together these learning kits gives the students an opportunity to exercise and develop observation skills and reporting skills in a unique way. It gives each student a chance to function as an integral part of a group and to participate in the peer teaching process both within the group and between groups.

Divide the class into three or more groups. Assign each group one of the following occupations or other appropriate and accessible occupations:

- school secretary
- school janitor or custodian
- school cateteria worker

Establish a schedule with these school personnel so that each group observes its worker for six five minute periods, distributed over two normal working days (or some similar schedule suitable to your class). If one or more inexpensive cameras are available for class use, have the groups take photographs of the secretary/janitor/cafeteria worker performing the tasks among themselves and either draw pictures or cut pictures out of magazines which depict those tasks. During the five minute sessions, the school personnel explain what they do and how, showing the materials they use.

Some sample tasks which might be performed by the personnel in your school follow for each occupation mentioned above.

School Secretary

1. talking to visitors
2. answering the telephone
3. taking dictation from the principal
4. consulting with the principal
5. filing
6. giving teacher supplies
7. giving first aid
8. returning lost articles
9. talking with students
10. putting material in teachers' mailboxes
11. typing
12. using duplicator

Janitor

1. straightening up work closet
2. sweeping floors
3. washing windows
4. carrying heavy boxes to classroom
5. talking with students
6. painting a wall
7. checking the heat
8. replacing light bulb
9. emptying the trash
10. mowing the grass or picking up around the outside of the building
11. talking to a teacher

Cafeteria Worker

1. planning the week's menu
2. checking the supply cabinet
3. getting something out of the refrigerator
4. measuring ingredients while cooking
5. serving meal
6. taking lunch money
7. helping student who dropped lunch tray
8. washing dishes
9. talking to students
10. calling on phone to place a food order
11. talking to delivery man

Next, the students gather together some of the materials used by their worker and label them appropriately. If the items are small enough the group puts them in a folder or small box. If the items are too large or expensive to obtain, they draw a picture of them.

Secretary

1. folder of different kinds of paper
2. folder of different kinds of envelopes
3. letterhead, carbon, and carbon paper
4. various school forms
5. ditto masters
6. stamp pad
7. secretary's notebook for shorthand
8. small file box with alphabetized sections

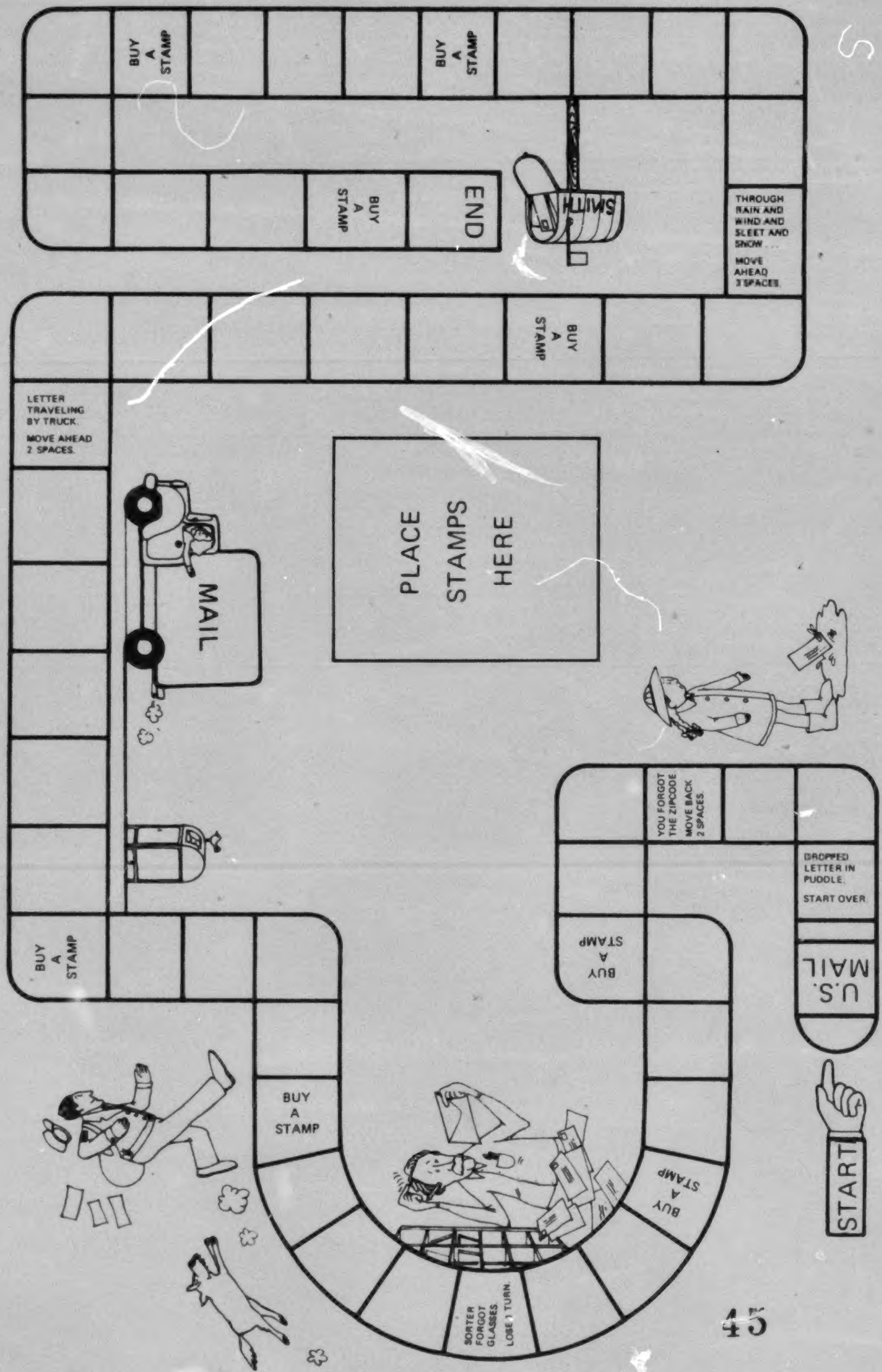
Janitor

1. broom
2. bucket
3. cloths
4. light bulbs
5. cleaning solution
6. trash receptacle
7. mop
8. paint/paint brush
9. lawnmower

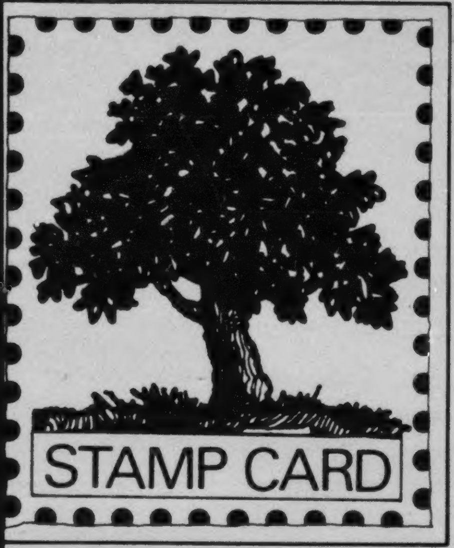
Cafeteria Worker

1. cookbook
2. measuring cups
3. pots and pans
4. silverware
5. plates
6. food samples (i.e., empty vegetable cans, cookie boxes, etc.)
7. cooking utensils
8. menu
9. apron

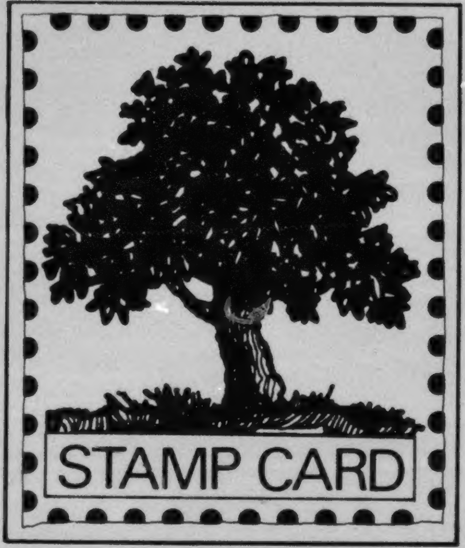
GIVE THAT LETTER A HAND


BUY A STAMP
BUY A STAMP
BUY A STAMP
END
SMITH
THROUGH RAIN AND WIND AND SLEET AND SNOW . . . MOVE AHEAD 3 SPACES.
BUY A STAMP
LETTER TRAVELING BY TRUCK. MOVE AHEAD 2 SPACES.
MAIL
PLACE STAMPS HERE
YOU FORGOT THE ZIPCODE MOVE BACK 2 SPACES.
DROPPED LETTER IN PUDDLE. START OVER.
BUY A STAMP
U.S. MAIL
BUY A STAMP
BUY A STAMP
BUY A STAMP
SORTER FORGOT GLASSES. LOSE 1 TURN.
START

2-4 PLAYERS


STAMP CARD

STAMP CARD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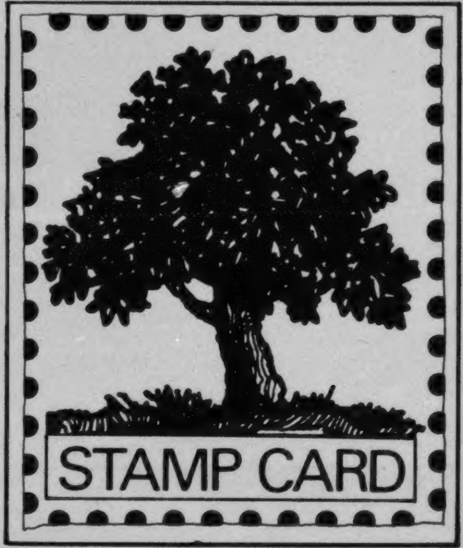
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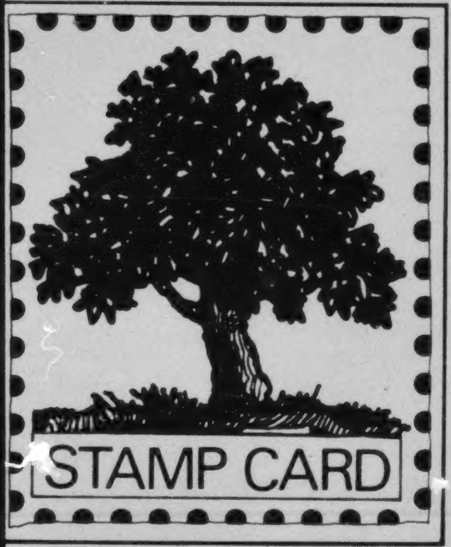
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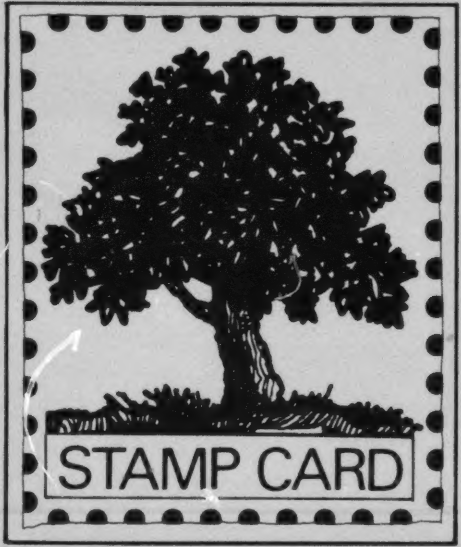
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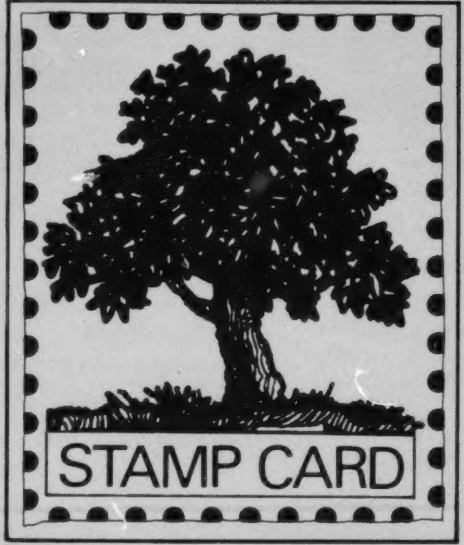
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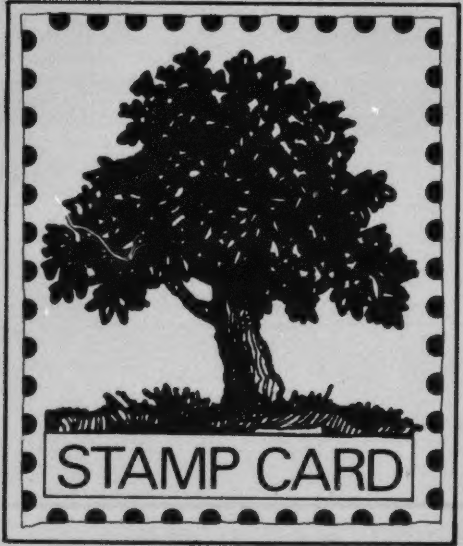
STAMP CARD

NOT ENOUGH POSTAGE
ON YOUR LETTER.

LOSE 1 TURN.

YOUR LETTER IS GOING
AIR MAIL.

MOVE AHEAD 3 SPACES.

THE POST OFFICE
WORKERS ARE
OUT ON STRIKE.

LOSE 3 TURNS.

THE SUPERVISOR JUST
CAME IN. EVERYBODY
WORKS FASTER.

MOVE AHEAD 1 SPACE.

YOU ARE SENDING
A SPECIAL DELIVERY
LETTER.

TAKE ANOTHER TURN.

THE SORTER READ
YOUR ZIPCODE WRONG.

LOSE 2 TURNS.

LETTER CARRIER
FORGOT YOUR LETTER.

LOSE 1 TURN.

YOUR LETTER CARRIER
IS OUT SICK. NO MAIL
TODAY.

LOSE 1 TURN.

Activity #6

The final step in the preparation of these learning kits is to make a series of tape recordings. Each group makes 3 tapes. If recording equipment is not available, substitute booklets for tapes.

Tape one explains the photographs. The group makes up captions for each photograph or picture telling exactly what the secretary/janitor/cafeteria worker is doing at that moment. Each student in the group is given responsibility for one or several photographs and for its tape recorded explanation.

Tape two explains how and for what purpose each of the materials gathered is used. Each student is assigned an object or tool used by his or her group's worker and explains its use on tape. All the objects or tools contained in the kit are explained to the students at some point during the six 5 minute observation sessions.

Tape three gives a set of directions for carrying out an activity normally done by the worker. At the last of the 5 minute sessions, each school worker explains, in detail, a task he or she performs routinely.

Examples:
Secretary: how to make a master for a duplicating machine
Janitor: what to use and how to wash a window
Cafeteria Worker: how to bake a cake

The respective groups write up explicit directions to these tasks and read them into the tape recorder. The directions must be complete and easily followed so that students unfamiliar with the task can perform it with little, if any, difficulty.

When the kits are completed, they are used by individuals or small groups of students to learn about those particular occupations. Each group is responsible for its own kit, checking to see that all items are there and that materials are available in the kit to perform the task on **tape three.**

Primary Level Option

At the primary level your students can make individual* learning kits about a working member of their family to better acquaint them with what parents do for a living.

In this regard, this activity requires a certain amount of sensitivity to students' and parents' feelings about their jobs, family life, and lack of work or family life. For example, students whose parents are unemployed or deceased may be embarrassed and confused by the activity if you routinely assume every student has an employed parent. One way to avoid such problems is to make clear from the beginning that students do not have to interview an employed parent but may interview a parent or other adult who has held one or more jobs in the past. A letter explaining the activity and its purpose should precede the interview, so that the family will be prepared for the student's questions.

Very often a family may be without a worker due to layoff, health problems, etc. These problems should not be overlooked or covered up in class. Unemployment is, unfortunately, a very real problem in American family life and should be discussed in light of the circumstances. The unemployment may have occurred because of the economic condition of the country, or area, or because of financial trouble in a particular company. Health problems might be the root of the unemployment as could some form of discrimination. Discussing these various reasons and causes of unemployment should give your students a better understanding of this dilemma and the problems it precipitates.

*This activity can also be done by pairs of students living near one another, using one available and willing parent.

As homework, the students ask the working parent to list and explain 3-5 things he or she does in a normal working day. The parent writes up the list for the student only if he or she does not write yet, otherwise the student draws up the list him- or herself. Several examples follow.

Automobile Mechanic
1. replaces muffler on car
2. checks wiring in engine
3. fills out forms
4. pumps gas

Doctor
1. takes temperature
2. talks on telephone to patient
3. fills out charts
4. bandages cut
5. visits patients in hospital

Bus Driver
1. drives bus
2. takes money from passengers
3. talks to passengers
4. cleans out bus

In class, the students draw pictures of the parents working at each activity that appears on their lists. The students either label the pictures themselves, copying from the list, or someone does the labeling for them.

Again, as homework, the students discuss with their parents the tools or equipment used in their work. A list of 3-5 tools is drawn up for the student's use.

Automobile Mechanic
1. car
2. tools
3. gas
4. oil cans

Doctor
1. thermometer
2. telephone
3. bandages
4. black bag

Bus Driver
1. bus
2. uniform
3. tool kit
4. tickets

Activity #6

If any of these items are available, they are brought in from home to become a part of the learning kit. The other items are drawn or found and cut out of magazines during class time and added to the kits.

The last step of the activity can be done in one of two ways (or both if you prefer and time and equipment are available).

- The students make a presentation to the class explaining what their parents do in their work. Use is made of the pictures of the parent at work and the tools used to do the job.
- Two tapes are made, one explaining the pictures of the parents at work and the other tells about the tools/equipment used by the parents. These tapes become part of the learning kits.

If a student wishes, he or she can find out, in detail, how to do a task performed by his or her parent and explain and/or demonstrate it to the class. This portion of the activity is optional and need only be done by those students who have an interest in or who are learning about an occupation that can easily be handled by them for this purpose.

When the activity has been completed, the learning kits are put on display for the benefit of and for further use by members of the class.

Useful Prior and Subsequent Activities:

Prior:
- Class discovers what to look for and what questions to ask when making their observations.
- Individual groups write letters to school personnel requesting observation/interview sessions.

Subsequent:
- Class presents occupational learning kits to another class.
- Learning kits are made for other occupations.

Resources: The best resources for this activity are willing parents and school personnel. Magazines can be obtained from doctors' offices or brought in from home by students.

Book:
- *About School Helpers,* Hoffman and Hefflefinger, Children's Press, 1224 West Van Buren, Chicago, Illinois 60607

Kit:
- **Career Awareness,** Grades K-3, Phyllis Dolgin 4 filmstrips/4 records or cassettes
  - working at school
  - to the hospital
  - building a building
  - a visit to the airport

  Educational Activities Inc., P.O. Box 392, Freeport, New York 11520

Film:
- "Helpers at Our School," Coronet Instructional Films, Coronet Building, 65 East South Water Street, Chicago, Illinois 60601
- "The School Cafeteria Worker," Eye Gate House Inc. 146-01 Archer Avenue, Jamaica, New York 11435

Comments From Teachers and Students After Using the Activity:

OCCUPATIONAL FOCUS:

- Homemaker

SOCIAL STUDIES RELEVANCE:

- Family
- Community Workers

Activity #7

Subject Area:

Social Studies

HOME IS WHERE THE HOMEMAKER IS

Capsule Activity Description:

Students observe and interview their family homemaker, gather data, and draw conclusions about this occupation.

Teaching Prerequisites:

materials: lined paper, pencils
contacts with community: optional: a panel of homemakers comes to class
approximate preparation time: 30-60 minutes
approximate class time: 2-4 classes

Social Studies Objective:

to develop an understanding of the role of individual family members and the need for them to work together.

ACTIVITY

This activity looks at the occupation of homemaker. Students discover the wide range of tasks performed by this person, the services and products that result from this work and the importance of this job for family well-being.

The integration of this activity into the social studies curriculum could be at several points.

- One appropriate point of integration would be while studying the family. The homemaker is important to the family structure and an accurate understanding by the student of what this job entails would be beneficial to all family members and their functioning as a whole.

Activity #7

- The homemaker is also important to the community. He or she is an integral worker in that group and is as dependent on other workers in the community for goods and services as they are on him or her to purchase them.

The homemaker clearly points out the dependence of people on each other and the need for all of us to work together.

For a period of 2-5 days students observe the family homemaker to discover the nature and variety of the job. You or your class may wish to write a short note home to parents telling them what you are doing and why, to prepare parents for the observation/interview sessions.

This activity requires a certain amount of sensitivity to students' and parents' feelings about their jobs, family life, and lack of work or family life. For example, students whose parents are problem drinkers, irresponsible, ill, or deceased may be embarrassed and confused by the activity if you routinely assume every student has an active or efficient homemaker. One way to avoid such problems is to make clear from the beginning that students do not have to observe or interview a parent who is a homemaker, but can also watch and question a relative or neighbor who does the homemaking tasks. You can also attempt to ensure the anonymity of the questionnaires by having students turn them in to you, without their names on them, and typing them so that there is no handwriting by which other students can guess at the family involved.

As homework, students observe the homemaker performing various tasks and with his or her help draws up an **Activity** chart of that day's activities (a sample follows).

6:30 a.m. got up and dressed
6:45 a.m. started to make breakfast
7:00 a.m. got children out of bed
7:20 a.m. family ate breakfast
7:50 a.m. children leave for school
8:00 a.m. washed breakfast dishes
8:20 a.m. made beds
8:40 a.m. made up grocery list and so forth.

In class after each observation/interview session, three or four volunteers read several homemaker's activity charts to the class. The following points are discussed after the readings:

- similarities anddissimilarities between charts (list on chalkboard);
- the activities that appear to be most important to the homemaker's work (list on chalkboard) and why;
- those activities which interest or do not interest the students and why.

Students calculate the amount of time spent on each activity, writing it in next to the appropriate activity on the activity chart.

Example:

8:00 a.m. washed breakfast dishes	20 min.
8:20 a.m. made beds	20 min.
8:40 a.m. made up grocery list	15 min.

On the last observation/interview day, in addition to the activity chart, students ask the homemaker several questions. (The class can make up their own questions for this portion of the activity.)

1. Were these past few days normal ones for you? If not, why?
2. Does this job require any special training or education?
3. What do you like best about this job?
4. If you could make your job better, how would you change it?
5. Is there any other job you would rather be doing?
6. Could your family get along without a homemaker?

The last homework discussion session includes the reading of 3 or more daily activity charts plus a larger number of responses to the above questions. Prior to a general class discussion, the students average the time spent by the homemakers on each activity, each day, using the information from the activity charts. The information is recorded in the following manner on a separate piece of paper.

Activity	**Average Time Spent**
washing dishes (per day)	1 hr.
making beds	20 min.
washing clothes	45 min.

If time permits the students draw a graph displaying this information. By listing and/or graphing this data, the students come away with a clearer understanding of a homemaker's job and the amount of time required to do the work.

A discussion follows covering the following points as well as any others the students may bring up.

- Why are homemakers mainly women?
- Do you think men can do this job as well as women?
- In the future, do you think more men will become homemakers and more women "breadwinners"? Why or why not?
- Would you like to be a homemaker? Why or why not?
- Do you think a homemaker gets much leisure time?
- Do you think the profession of homemaker is necessary to the family and the way we live?
- Could anything replace the homemaker?

To further reinforce the homemaker's profession, supply the class with role profiles and have the students role play these situations based on the information they gathered in their observations, interviews and discussions. Two **sample** role profiles are included here. Class reaction and comments follow each role play.

Activity #7

A. Homemaker: You have had a terrible day. You have run out of diapers and because both twins are sick you can't get to the laundermat to do a wash. You don't know what to do. You could call a neighbor but the telephone is out of order. It seems to take so long to get the phone fixed nowadays. The twins seem to be getting sicker and crying louder, and you're not feeling too well yourself. You really should take the babies to the doctor but there's no gas in the car. What are you going to do?

B. Homemaker: You love your new job. You are back at the hospital doing work you really find interesting. Getting the babysitter for Philip was easy, but trying to get the housework done and dinner ready at a reasonable hour have been problems. Fred/Sally is just going to have to give you some help.

Fred/Sally: You don't understand why people aren't happy with what they've got. You'd think that watching Philip and cleaning house would be a terrific way to spend a day. You can't think of any reason why somebody who can do those things would rather have a "real" job. Dinner better be ready tonight when you get home –– you're starved.

Useful Prior and Subsequent Activities:

- For comparison, study other members of the family in the same manner.
- Invite a panel of homemakers (preferably parents) to class for a question and answer session. It would be especially beneficial for the panel to be made up of both full-time and part-time homemakers.

Resources:

Record:
- Free to be You and Me, Marlo Thomas, Bell Records
  "Housework"
  "Parents are People"

Transparencies:
- Things We Do Around the House, Western Publishing Co., Educational Division, 1220 Mound Avenue, Racine, Wisconsin 53404

Comments of Teachers and Students After Using the Activity:

OCCUPATIONAL FOCUS:

- Career Awareness

SOCIAL STUDIES RELEVANCE:

- Family
- Citizenship
- Community Workers

Activity #8

Subject Area:

Social Studies

JOB BANK

***Capsule Activity Description:**

The class compiles a "job bank" based on interviews with parents.

Teaching Prerequisites:

materials needed: tagboard or construction paper
contacts with community: parent interviews
approximate teacher preparation time: ½-1 hour
approximate class time: 3-4 classes

Social Studies Objectives:

to understand the relation of the employed parent to the family and to society;
to become aware of some of the conflicts between family life and employment.

ACTIVITY

In this activity, each student chooses one parent to interview (if no parent is available, students can interview relatives or guardians) to gather information for a class "job bank" which houses information and photographs on different careers in the community.

*The core ideas for this activity came from two activities--one developed by Leah J. Pointer, the other by J.H. McGinn and K. Morris. The original activities are part of *The World of Work. A Curriculum Guide for Grades One through Twelve*, Educational Systems Development Corp. (New Orleans, Louisiana: 1972), and *Career Education: A Handbook for Program Initiation*, Mississippi State Department of Education, Jackson Division of Vocational and Technical Education (Jackson, Mississippi: 1972), respectively. *Career Education: A Handbook for Program Initiation* may be ordered from Research & Curriculum Unit, Mississippi State University, P.O. Drawer DX, State College, Mississippi for $2.50.

Activity #8

The activity can be easily integrated into a unit on the family whenever the family is discussed in terms of who should be the "breadwinner" and what the responsibilities of a "breadwinner" should be. The activity can also be used to illustrate conflicts and relationships between family members and the world of work. Finally, the activity can be used when studying the community and its workers because, through their interviews with parents, students will be able to identify what industries, businesses, agencies and other institutions exist in their communities –– institutions which provide the local citizenry with services which students should be aware of.

This activity requires a certain amount of sensitivity to students' and parents' feelings about their jobs, family life, and lack of work or family life. For example, students whose parents are unemployed or deceased may be embarrassed and confused by the activity if you routinely assume every student has an employed parent. One way to avoid such problems is to make clear from the beginning that students do not have to interview an employed parent, but can also interview an employed relative or neighbor or interview a person who may not be currently employed but who has held one or more jobs in the past. You can also attempt to ensure the anonymity of the questionnaires by having students turn them into you, without their names on them, and typing them so that there is no handwriting by which other students can guess at the family involved.

Begin the activity by breaking the class into small groups to develop their own questionnaire. You can suggest a few examples of information the questionnaires can be designed to elicit to start the groups on their task. A sample questionnaire that students can use as a model follows.

NAME:

OCCUPATION AND/OR TITLE:

1. Please describe what you do in your job.
2. a. Do you work indoors or outdoors or both?
   b. Does your work involve physical labor, mental labor, or both?
   c. What hours do you work?
   d. How many hours a week do you work?
   e. Do you work during the day or night?
   f. Do you work weekends?
3. Do you have to wear any special clothing for your job?
   If so, what and why?
4. Do you work with other people? With whom?
5. What is the nature of your work with other people?
6. Does your job require any special training or education?
7. Do you like the work you do? What do you like about it?
8. What don't you like about it?
9. Why did you choose this field?
10. Does your job create any problems in your family life? (Does overtime work keep you from your family? Does your work upset you so that you come home in a "foul" mood?)
11. Do you think I might like or be good at a job like yours when I grow up? Why?

When the questionnaires are completed, you can either allow each group to administer its own poll or you can have a class discussion in which the best questions from each group's survey instrument are combined into a single class questionnaire. For further ideas on developing questionnaires, see the section on "Polls" in the chapter on "Effective Teaching Methods for Career Education"at the end of the manual.

Before administering their questionnaires, each student "pilot tests" the questionnaire on a classmate to practice asking questions and to make sure that the questions are clear. Then give the class two to five days in which to complete the interviews with their parents. Tell students to ask the parent interviewed for a photograph of him or her on the job, illustrating some aspect of the work he or she performs. If a photograph is not available or cannot be easily taken, students can either search through magazines and newspapers for a picture that illustrates the parent's work or draw a picture which illustrates some aspect of the parent's work. Check the section on "Interviews" in the chapter on "Effective Teaching Methods for Career Education" at the end of the manual for further information on how students can conduct successful interviews.

When the interviews have been conducted, each student reports the results to the class. In addition, all survey results and photographs are labeled and posted on the bulletin board. Keep a running tally of all the parents' responses. When it is time to change the bulletin board, put the surveys and photographs into a job bank (loose-leaf binder) as a resource guide for other students. Place a copy in the library and school guidance office.

Possible follow-up discussion topics include:

1. Based on the jobs your parents work in, let's list all the types of businesses, agencies, and industries that are in our community.
2. Why do certain communities have certain types of businesses and agencies in them and others do not? (e.g., is it because of the presence of natural resources, a cheap labor force, a citizenry with money to buy the products, the weather, the presence of a college or university, or pure accident?)
3. In general, how did most parents answer the questions on liking or disliking their work? Does it seem as though mothers or fathers enjoy their work more? Why? Do people seem to like certain types of jobs more than other jobs—–for example, jobs that involve outdoor [illegible] physical activity?
4. Do any of these jobs seem to create family problems for the parents? Why do some jobs do this but not others? What kinds of jobs are more likely to create such problems? If you were a "breadwinner" and had a family problem, how would you solve it?
5. Why do you think your parents (relatives or guardians) chose the jobs they did? Was it just because of the salary and the work? Did they have any choice in what job they took? Can you have any choice?
6. Who should the "breadwinner" be in the family? Should it always be the man?

Useful Prior and Subsequent Activities

- Students can invite one of their parents to class to discuss their jobs.
- Students can role play scenes of conflict between an employed parent's responsibility to his or her job and to the family.
- If any parents work within walking distance of the school, students, as a class, can visit the businesses of most interest to them.
- As other careers are explored, students can add new occupations to the job bank resource book.

Activity #8

- Two games:

1. "Photoplay" (Played like Charades)
   - Take all the photographs of parents at work and put them into a box.
   - Divide the class into 2 teams, have them sit on opposite sides of the room.
   - A member from one team comes forward and draws a photograph from the box. He or she role plays that person at work. The team must guess the occupation. If guessed correctly the team gets 2 points.
   - To add more excitement to the game, time each role play so that the team must guess the occupation within an alloted period of time.
2. "Job Hunt" (Played like a Spelling Bee)
   - Divide the class into 2 teams, and have them stand on opposite sides of the room.
   - Using the box of parent photographs, draw an occupation.
   - Say the name of the occupation.
   - Alternately, team members describe a duty related to that occupation or names a tool or object associated with it.
   - If a student misses a question he or she is out and the next student on the team tries to answer it.
   - The person left standing at the end of the game is the winner, or, if time runs out before the end of the game, the team with the most members still standing is the winner.

Resources:

Film:
- "Families and Jobs," McGraw-Hill Book Co., Text-Film Department, 330 West 42nd Street, New York, New York 10036

Filmstrips:
- "Where People Live and Work," Visual Educational Consultants, Inc.
- "Working Together in a Family," Society for Visual Education, Inc., 1345 Diversey Parkway, Chicago, Illinois 60614

Books:
- *The Community Where You Live,* Mary Lusk Pierce, Allyn-Bacon Inc., 470 Atlantic Avenue, Boston, Massachusetts 02110
- *Occupational Information,* R. Hoppock, McGraw-Hill, 330 West 42nd Street, New York, New York 10036

Comments From Teachers and Students After Using the Activity:

OCCUPATIONAL FOCUS:

- News Reporter

SOCIAL STUDIES RELEVANCE:

- Current Events
  - News Writing
  - Public Speaking
  - Interpretation

Activity #9

Subject Area:

Social Studies

"GOODNIGHT, CHET," "GOODNIGHT, DAVID"

Capsule Activity Description:

The class studies television news format and uses it to present their current events.

Teaching Prerequisites:

materials: map of United States and/or world (optional)
contacts with community: none
approximate preparation time: 30 minutes
approximate class time: 2½-4 classes

Social Studies Objective:

to become aware of the news and the affect it has on the individual and society.

ACTIVITY

This activity explores television news from the point of view of the reporter. It focuses on the reporter as a "writer" and "interpreter" of the news, rather than just its "reader." It also gives the student an opportunity to become familiar with different types of news and the ways in which the news is handled.

Appropriately, this activity can be integrated into the curriculum when studying current events. It not only meets the goals of introducing the students to and making them aware of newsworthy events affecting their lives and the world, but it also gives them the opportunity to interpret and/or write these and other stories that interest them, as well as deliver them as a member of a "news team."

Activity #9

Students watch the local television news three times over a period of a week.* The local station chosen for this assignment should be the one with the most varied format and utilizing specialized reporters (e.g., consumer reporter, suburban reporter, education reporter, etc.). It does not mean that this is necessarily the best format. It is, however, easier for the students to identify the different types of news and to observe different manners of presentation.

The first night the students watch the news and list, by title if possible, all the news reporters and special reporters (anchor crew, weather, sports, etc.) who appear on the broadcast.

In class the next day the students feed back to you their list of reporters which you write on the chalkboard. Each student copies down the complete list on a piece of paper, leaving adequate space between each entry for commentary.

The second news observation night the students describe in a complete sentence or two the nature of each reporter's material. For example,

consumer reporter: He or she talks about different products and whether some are good or bad for the person who buys them.

editorial reporter: He or she tells you his or her opinion on some important issue.

anchor crew: They introduce each reporter and present some news reports themselves.

In class discuss each reporter's type of news and why that kind of news is important to you as a class and as individuals, and/or why you might be interested in it. For example,

local news: Tells us about important events in the towns surrounding the local news station. If a water main breaks in a town ten miles from here why are we interested in hearing about it?

sports: Gives us a rundown of local, national, and sometimes international sports events. Not everyone is interested in sports; why is this kind of news included in the news broadcast?

In the last of the observation sessions, each student chooses one reporter to watch carefully on the evening news. The student takes notes on the following questions:

1. What was your reporter's topic?
2. Briefly tell what it was about.
3. Was the presentation good?
   Do you like the way the reporter speaks?
   Can you understand what the reporter is telling you?
4. Does the reporter add his or her own opinion to the report or does he or she just tell the story as it happened?

In class the next day arrange the front of the room as it is on the television news broadcast. Use both chairs and tables. Hang your map of the United States/world (if you have one) to give your weather person a helpful prop.

Ask for volunteers to fill the various reporter spots (preferably the reporter they observed the previous evening). Each student tells the class what his or her newsperson reported on "last night's" news, using the notes taken for backup. At the completion of the class news "analysis," you can either ask for a new set of volunteers or ask for comments on the broadcast from the class as a whole.

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*This activity may be done in pairs if more beneficial for your students.

Run your subsequent current events periods in this same way. Assign students specific reporters from the news broadcast—using as many different reporters as possible (including weather, sports, entertainment) — and tell them to do one of three things:

1. Watch the television news broadcast and report back to the class the story their reporter covered.
2. Watch a different television news show and report on a story their reporter would have covered on that news broadcast.
3. Find an appropriate story in the newspaper or some appropriate event that has happened in school or locally and use that as the basis for their own news report.

Again arrange the room as for the TV news broadcast. Not all the reporters need to be at the front of the room at once. Establish an order of appearance and as one reporter is finishing up, the next one can be taking his seat.

Optional:
- Working alone or in pairs, students make visuals (headlines, maps, murals, demonstrations, score cards, etc.) to enhance their report.
- If you have video tape equipment available, record class news broadcast so students can see themselves and respond to their own performance.

Useful Prior and Subsequent Activities:

- Invite a reporter (or several; hopefully, one will be a parent) from local news media to class to discuss and answer questions about his or her job.
- Take a field trip to a local television or radio station to see how news is produced for the public.
- Introduction to the newspaper: its history, its use in society, what it contains, how to read/skim it.

Resources:

Books:
- *Behind the Scenes of Television Programs,* Leon Harris
- *You Visit a Newspaper Television Station,* Leonard Mashover
- *Come to Work with Us in a Television Station,* Jean and Ned Wilkinson

Filmstrip:
- *Community Workers and Helpers,* Part II, "Television Workers," Society for Visual Education, Inc., 1345 Diversey Parkway, Chicago, Illinois 60614

Comments From Teachers and Students After Using the Activity:

OCCUPATIONAL FOCUS:

- Travel Agent
- Tour Guide

SOCIAL STUDIES RELEVANCE:

- Geography
- Map Reading
- Transportation
- American History

Activity #10

Subject Area:

Social Studies

TAKE A TRIP

Capsule Activity Description:

The class solves a travel problem acting as a travel agent or tour guide, then role plays the various solutions.

Teaching Prerequisites:

materials: map(s) of United States; encyclopedia; geography and/or history books (optional)
contacts with community: none
approximate preparation time: 1 hour
approximate class time: 2½-3 classes

Social Studies Objective:

to become aware of the geographic location of cities in the United States, various points of historical interest these cities have to offer, and the methods of transportation available to get from one city to another.

ACTIVITY

This activity has two parts. First, it asks your students to solve a problem using various skills developed in your social studies classes, and second, to present their answers in the form of role plays. The activity may be used as a review exercise or to introduce and give practice in a new skill.

- For example, its integration can be at various points in a geography lesson; an especially good place would be when developing map reading skills.
- It can also be incorporated into a unit on transportation to gain a better understanding of society's dependence on transportation and its varied uses.

Activity #10

- When studying American history the activity allows your students to familiarize themselves with major cities in the United States. By altering it slightly (half the class solving the problem in the present and half in the historical period being studied) it lends itself to a comparison of society past and present.

The students select a partner.* **Each pair** of students is assigned the role of travel agent or tour guide. For a period of 20-30 minutes the students work together researching the hypothetical trip or tour assigned them. Each trip and tour is different as no two pairs of students are working from or with the same city.

Write the following scenarios on the chalkboard or have them duplicated and distributed to the students. Make the assignment of cities as indicated below. (This activity has been written based on a class size of 24. Depending on your needs you can either remove or add cities to the list. You may also wish to change the list to suit the material you are teaching.)

Write in the blanks in the appropriate scenarios, one of the following cities. Remember, each pair of students works with a different city.

	Travel Agents		Tour Guides
1.	Chicago, Illinois	1.	Denver, Colorado
2.	Bangor, Maine	2.	New Orleans, Louisiana
3.	St. Augustine, Florida	3.	San Antonio, Texas
4.	San Diego, California	4.	Washington, D.C.
5.	Omaha, Nebraska	5.	Boston, Massachusetts
6.	Phoenix, Arizona	6.	San Francisco, California

Travel Agent

You are sitting in your office in_______________(city, state) when Mr. and Mrs. Roberts walk in. They want to take a trip to see the United States, particularly the following cities: Denver, Colorado; New Orleans, Louisiana; San Antonio, Texas; Washington, D.C.; Boston, Massachusetts; San Francisco, California.

They don't want to fly from place to place because they might miss some scenary or important place of interest along the way, but neither do they want to drive their car.

Using the maps of the United States and the books at the front of the room (or wherever) answer these questions.

1. In what order should Mr. and Mrs. Roberts visit the cities they want to see? Remember where they live when planning the trip and that they want to see as much of the country as possible.
2. How will Mr. and Mrs. Roberts get from city to city? They can use different kinds of transportation including an airplane, but only when traveling a very long distance or when there is not much of interest to see along the way.
3. Decide what time of year would be best for them to travel and why.
4. Tell the Roberts what kind of clothes they will need to take with them to be comfortable. Make a list of the most important things.

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*You might wish to pair a slower student with one more able.

Tour Guide

You are a tour guide in ______________(city, state). You have just heard from a friend of yours, Janice Cortez, who is a travel agent in another city, that two of her customers, Mr. and Mrs. Roberts, are coming to visit your city. She would like them to have a very special trip so she has asked you to arrange one of your **best** tours.

Using the books at the front of the room (or wherever) find out the following things.

1. Locate as many interesting places as you can (at least 5) for the Roberts to visit.
2. Find out what makes them interesting.
3. Draw a map for the Roberts to follow when going on their tour. (You can make this map up.) Show what they will see and how they will get from place to place (taxi cab, bus, subway, car, feet).
4. Prepare a short talk to explain the places of interest on the tour.

When the trips have been planned and the tours set up, the class role plays the parts of Mr. and Mrs. Roberts, the travel agents, and the tour guides. Two students are chosen (or volunteer) to be Mr. and Mrs. Roberts. A pair of students act as travel agents, explaining to the couple how they have arranged their trip (utilizing a map of the United States), what they will need for the trip and so forth. A travel office can be set up at the front of the room for this enactment.

The tour is taken within the classroom, another pair of students acting as tour guides. Various points in the room are designated as the places of interest to be visited, and chairs, strategically located, serve as different modes of transportation used to get from place to place. The prepared talk allows the Roberts and the class to gain an insight into the city being visited.

The parts are changed according to the cities in the activity so all the students have the opportunity to role play either the travel agent or tour guide who help make Mr. and Mrs. Roberts' trip a success.

Option: This activity can be changed to focus on cities in foreign countries as well as those in the United States.

Useful Prior and Subsequent Activities:

- See Activity #26
- Invite a parent to class who has planned and taken a trip and ask him or her to explain the preparation that went into the trip. If the son/daughter accompanied the parent, he or she should be allowed to participate in the presentation.

Resources:
- Encyclopedias (school library)
- Map(s) of the United States (school library)
- Atlas (school library)
- U.S. Geography and/or history books, (school library)
- Posters of cities in the United States can often be obtained from local travel agencies.
- For additional information on the cities being studied, write to the local Chambers of Commerce. They are usually happy to provide you with information on their city from places to visit, to weather conditions, to local resources.

Activity #10

Denver, Colorado
Chamber of Commerce
1301 Welton
Denver, Colorado 80204

New Orleans, Louisiana
Chamber of Commerce
301 Camp
New Orleans, Louisiana 70130

San Antonio, Texas
Cahmber of Commerce
602 E. Commerce
San Antonio, Texas 78205

Washington, D.C.
Metropolitan Board of Trade
1129 20th St., N.W.
Washington, D.C. 20036

Boston, Massachusetts
Chamber of Commerce
125 High Street
Boston, Massachusetts 02110

San Francisco, California
Chamber of Commerce
6454 Mission St.
Daley City, California 94014

Comments By Teachers and Students After Using This Activity:

Section Two: LANGUAGE ARTS

1. ACTIVITIES SUMMARY

This section of the manual contains the following ten activities, sequenced very generally from easiest to most difficult.

11.* *"HOBO":* Card game for 2-5 students which asks the players to match an occupation with a tool or object representative of that occupation.

12. *"I AM ME":* Students make "I Am Me" books which express personal feelings and attitudes.

13. *SHARE AND TEACH:* Students explain and/or teach the skills involved in a hobby or a special area.

14. *HARD HATS:* Students learn about the construction industry, observing and interviewing workers employed in these occupations.

15. *ASSOCIATION:* A game played by teams, the object of which is to guess the tool or object being described and the occupation associated with it.

16. *A COMMUNITY PROBLEM:* Class produces a play about community service workers.

17. *HIRING FOR JOBS IN MOTION:* Students choose a transportation mode, research career opportunities in that mode, and simulate a company personnel department "hiring" applicants to work in that business.

18. *"WHAT'S MY LINE?":* Students research occupations and play the game "What's My Line?"

19. *BORROW A BOOK:* The class learns about library procedures and applies them by setting up and maintaining a classroom library.

20. *TO SERVE YOU BETTER:* Students survey parents and neighbors to discover need and use for people in service trades.

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*The activities in this section of the manual begin with number 11 because the numbering continues sequentially after the last activity (number 10) of the previous section of Social Studies activities.

2. INTRODUCTION

As a language arts teacher at the elementary level, you should consider career education as an integral and appropriate component of your teaching which will **increase your students' ability and motivation to learn language arts content and skills.** Moreover, it is easy for you to incorporate career education into your subject area because of the flexibility inherent in variety of topics, instructional areas, and skills, including reading, writing, listening, speaking, spelling, sentence structure, communication styles (poetry, prose, drama), and analytic skills (interpretation, comprehension, drawing conclusions, vocabulary).

Because of the latitude you have in how you teach language arts, you will have no difficulty identifying appropriate points of entrance in your curriculum for introducing career education activities **which will complement and further your language arts objectives.** The latitude you have in what you teach also increases the material you can tap. Most of the four subject areas activities contained in the manual in some way encompass the skills of listening, speaking and writing. By slightly changing the emphasis, a social studies, mathematics, or science activity can easily become a language arts exercise, or, better yet, an activity that draws on and **develops several sets of complementary skills.**

How will the integration of career education activities into language arts help you achieve your objectives? There are at least three answers to this question.

1. While engaging in the career education activities provided in this manual, students will learn a great deal about language arts **topics,** related to the career or occupation they are studying. For example, if a group of students visits backstage of a theatre and talks with the actors and actresses, stagehands, choreographer, set designer, and other theatre personnel, the students will, in the very process of their observation and questioning, learn much about how plays are written (e.g., stage directions) and about drama as a form of communication. In short, learning about careers in related fields automatically involves learning about language arts **subject matter.**
2. Many of the **skills** in the language arts curricula will be developed or reinforced through the use of career education activities including reading, writing, and library skills. For example, if the class takes a trip to the library to become acquainted with the duties of the librarian and other library personnel, the students are also going to learn some of the skills associated by doing research and utilizing library resources.
3. By including career education activities in your curriculum, you will increase your students' **motivation** to study and learn about language arts topics and develop related skills. By studying careers related to language arts in exciting, action-oriented ways, students will be more stimulated to delve further into the field related to the occupations they are investigating. For example, students who take a field trip backstage to a theatre are likely to want to read and write more plays. In this manner, career topics have the attractiveness of **"relevance"** for studying and learning language arts content matter and skills. Activities dealing with concrete, current occupations of personal concern to your students can add motivation to the disaffected, as well as an involved student who wants to know what language arts has to do with the world of an adult. By including career education activities in language arts, you bring the world outside your classroom inside. School, and language arts in particular, becomes more in tune with the world and better able to prepare the student for it.

How can integration of career education with language arts operate in practice? Let's look briefly at a hypothetical Sample Week's Lesson Plan to see how integrating career education activities into your curriculum furthers language arts teaching objectives.

3. SAMPLE WEEKS' LESSON PLANS

The hypothetical but typical lesson plans that appear on the following page are "being used" in language arts while learning about alphabetizing. It is the elementary level teacher (and student) who is able to spend time, everyday, on language arts. Therefore, these lesson plans differ from the others in the catalog as they are not meant to be executed in five class sessions over a period of a week. Rather, it is assumed that they will be conducted over a two week period. Homework assignments in the lesson plans refer to work assigned that night and due the next language art class.

The first two classes are devoted to practice in alphabetizing. When you have discussed the use of alphabetizing in everyday life, and the class has become proficient in the skill, you decide to integrate a career education activity (Activity #9) into the next two-three language arts periods. By so doing you reinforce the skills of alphabetizing, make the skills relevant to real life, and familiarize the class with the library and its resources – all important **language arts objectives.** You have also met a **career education objective** by making the class aware of careers in library work.

This activity can be revised depending on the grade level you teach or the way in which you want to integrate it. For example, the cataloging system can be greatly simplified or the lower grades, or older students can design one of their own. If you are working on sentence writing or summarization, more emphasis can be placed on the annotated catalog cards.

No matter how you adapt this activity to fit your plans and your students' needs, the essential goal should not be lost or overlooked: to help your students become aware of the various career paths open to them, what is required and involved in different occupations, and the relevance of school to life both now and later.

SAMPLE WEEK'S LESSON PLANS

(An illustration of one way to integrate a career education activity into your course.)

HOMEWORK ASSIGNMENT	DESCRIPTION OF CLASS ACTIVITY	
Each student is given 6 letters of the alphabet. He or she alphabetizes them and finds an object in his or her house that begins with each letter.	• Class discusses the alphabet and the concept of alphabetizing. • Students perform simple exercises for practice in alphabetical order.	DAY 1
Students are given several names to look up in the telephone book. They copy name, address and telephone number onto a piece of paper.	• Students alphabetize classmate's names. Discuss what happens when two or more names start with the same letter. • Class discusses places where alphabetizing is used and why.	DAY 2
	• Class takes trip to library to learn how to use it and to become acquainted with the people who work there. (Activity #9) • Students are given a book title to find in card catalog. They copy the information off the card and locate the book in the stacks.	DAY 3
Students write annotated catalog cards for 2 books they have at home and have read.	• Students discuss trip to library and how they would set up a class library. • Students begin organizing class resources for library - classify books - alphabetize by section - catalog	DAY 4
	• Students complete class library - finish cataloging - discuss rules for borrowing a book • Students are assigned to library positions on a rotating basis.	DAY 5

4. CROSS REFERENCE

The cross reference below identifies by number activities which treat particular occupational issues and jobs (listed across the top of the page) and activities which reinforce specific language arts topics and skills (listed down the left-hand margin of the page). By using the reference, you can locate activities by specific jobs or occupational issues which you may want to teach or by particular language arts topics and skills which you feel are relevant points in your curriculum at which to introduce a study of careers.

CROSS REFERENCE

OCCUPATIONAL FOCUS / TOPIC OR SKILL	Airline Industry	Automobile Mechanic	Banking	Barber	Beautician	Cafeteria Worker	Catologuer	Controller	Community Service Worker	Construction	Dentist	Dietician	Doctor	Environmental Protection	Farmer	Firefighter	Fishing Industry	Funeral Director	General Career Awareness	Homemaker	Janitor	Librarian
Alphabetizing							19															19
Association																			11			
Classification							19												31 23			19
Decision-Making									16							32			39			
Following Directions			25																			
Interpretation											36	27 36	27 36	40					8 29 39	7		
Library Skills							19															19
Listening						6		28	4							4			15 8 29 18 6	7 28	6	
Notetaking		20		20	20					20								20	8 29 18			
Observation	35					6			4			27	27	40	35	4	35		15 8 29 6	7	6	
Questioning	35	20		20	20					20	36	36	36		35		35	20	18 8 19			
Reading							19	28												28		19
Recall											36	36	36						15			
Speaking		20		20	20	6		28	16 4	20	36	36	36			32 4		20	15 18 6 3 8	7 28	6	
Summarization							19				36	36	36									19
Word Recognition																						
Writing	35						19		4		36	36	36	40	35	4	35		11 31 3 39 2 6			19

OCCUPATIONAL FOCUS / TOPIC OR SKILL	Medical Paraprofessional	Meteorologist	News Reporter	Nurse	Nurse's Aid	Physical Education Teacher	Physical Therapist	Police Officer	Political & Appointive Office	Pollster	Postal Service	Red Cross Volunteer	Researcher	Restaurant Owner	Secretary	Self-Awareness	Stacker	Teacher	Television Repair Person	Tourism	Transportation	
Alphabetizing																	19					
Association																						
Classification																	19					
Decision-Making	32			32	32			32		39		32	39									
Following Directions																						
Interpretation			9	27 36		36	36			29 39			27 39									
Library Skills																	19					
Listening			9					4	28	29	5				6	13		13				
Notetaking										29				20					20			
Observation		35	9	27				4		29			27		6					35		
Questioning		35		36		36	36			39			39	20					20	35	17	
Reading									28								19					
Recall				36		36	36															
Speaking	32		9	32 36	32	36	36	32 4	28		5	32		20	6	12 13		13	20		17	
Summarization			9	36		36	36										19					
Word Recognition																						
Writing		35	9	36		36	36	4		39	5		39		6		19			35	17	

OCCUPATIONAL FOCUS:

- General Career Awareness

LANGUAGE ARTS RELEVANCE:

- Association
- Word Recognition

Activity #11

Subject Area:

Language Arts

"HOBO"

***Capsule Activity Description:**

Card game for 2-5 students which asks the players to match an occupation with a tool or object representative of that occupation.

Teaching Prerequisites:

materials: deck of Hobo Playing Cards (included at end of activity)
contacts with community: none
approximate preparation time: 15 minutes
approximate class time: free time activity

Language Arts Objective:

to develop associative skills;
to aid in word recognition;
to reinforce working and playing as a member of a group.

ACTIVITY

This activity introduces the student to a large number of occupations and some of the tools or objects associated with those careers. Although none of the occupations is dealt with in detail in this activity, it allows students to gain an awareness of the vast number of careers in the world of work. It is primarily a free time activity (for 2-5 players), helping to develop the skills of association and aids in word recognition as well as promoting cooperation among students.

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*This activity has been revised from an activity developed by the Counselors of Howard County. We are grateful for permission to use it. The original activity is part of *Career Education Resource Guide, Grades 6-8. It's Time to Plan,* The Howard County Public School System (8045 Route 32, Columbia, Maryland 21044: 1971).

Activity #11

The object of the game is to match cards that depict particular workers with a tool or object that is representative of that occupation. For example: a secretary and a typewriter would be a matched pair. The student who has the most correctly matched pairs at the end of the game is the winner. The loser is the student left holding the Hobo.

How to Play. (Go over directions with all groups prior to playing.)

Deal out all the cards to the players. Each player looks at his or her hand, locating all the pairs. These pairs are placed face up on the table in front of the player. The occupational name and its corresponding tool are read out loud for each matched pair on the table. If the match is correct the pair remains on the table; otherwise, the cards are returned to the player's hand. After each player has cleared his hand of all pairs, the student to the left of the dealer starts the game by drawing a card from the hand of the student on his left and so on, in turn, around the table. Each time a player draws a card, he or she clears his or her hand of any pairs, again saying its name. Remember: It is best not to let it be known when the Hobo has been passed from one hand to the next.

The player drops out of the game once his or her hand is empty of all cards.

This game can easily be played by all ages. If students are non-readers, they need only look at the pictures and associate the occupation with the appropriate tool or object.

A list of the cards included in this activity by title of worker and name of tool or object is supplied below.

Hobo Playing Cards

music conductor – orchestra
secretary – typewriter
waiter – menu, glasses
sales clerk – cash register
mechanic – car, wrenches, oil can
street cleaner – broom
gas station attendant – gas pump
farmer – tractor, pitchfork
gardner – plants, watering can
carpenter – hammer, nails
doctor – stethoscope, patient
jockey – horse, saddle
artist – canvas, palette
painter – paint, brush
train conductor – ticket, punch
airline attendant – plane
paper carrier – newspaper
beautician – comb, brush
mail carrier – mail box
teacher – chalkboard
baker – bread, cookies
librarian – books
telephone operator – telephone
police officer – squad car, badge
firefighter – fire truck, hose
truck driver – truck
chemist – test tube, flask
hobo

Useful Prior and Subsequent Activities:

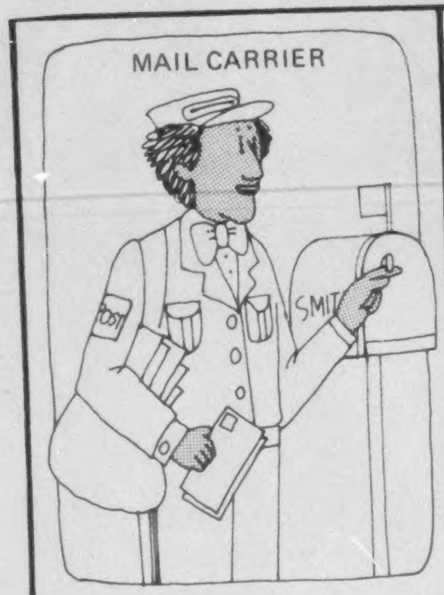
Prior:
- Go over cards with whole class, identifying, by name, the occupations and associated tools/objects.

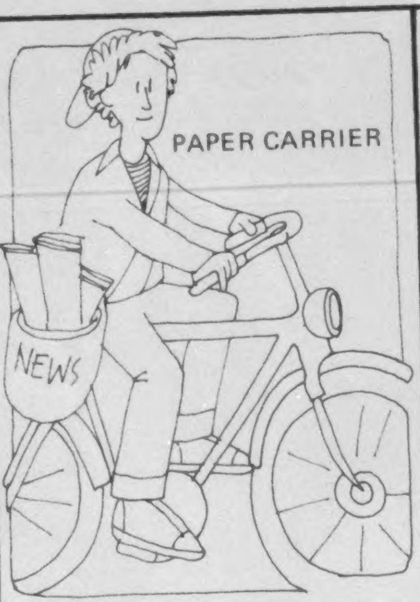
Subsequent
- Students make own set of cards using different occupations.

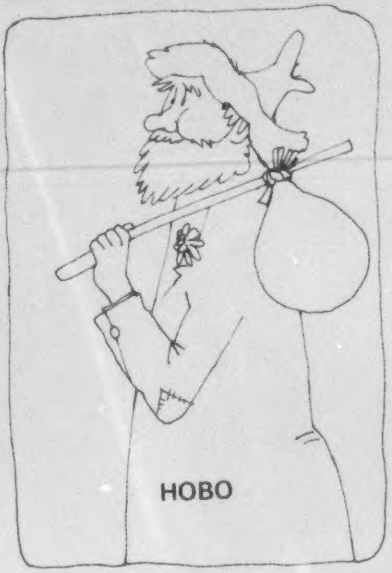
Resources: Playing cards supplied with activity.

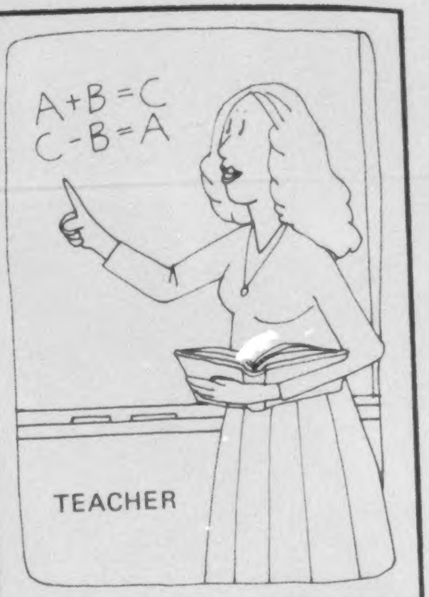
Game: **Job Cluster Game,** Handbook for Occupational Awareness, K-2, Houston Independent School District, Houston, Texas.

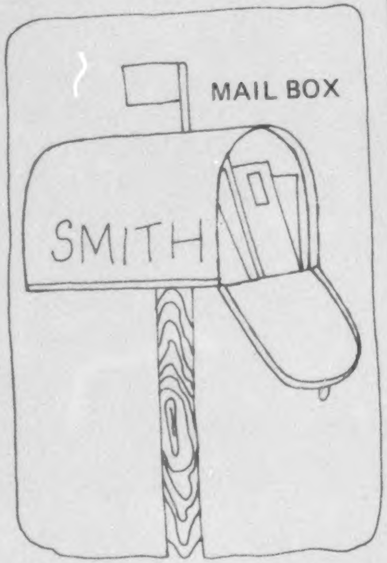
Comments From Teachers and Students After Using the Activity:

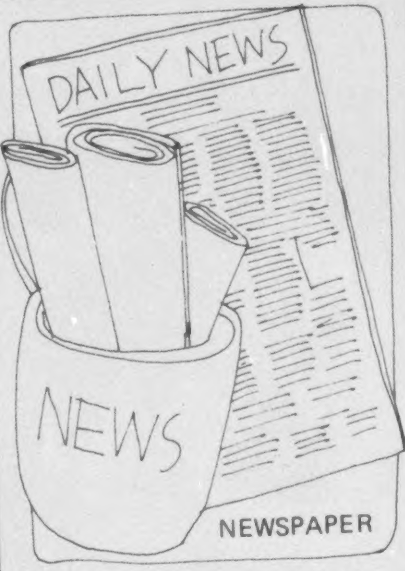

MAIL CARRIER
POST
SMIT


PAPER CARRIER
NEWS

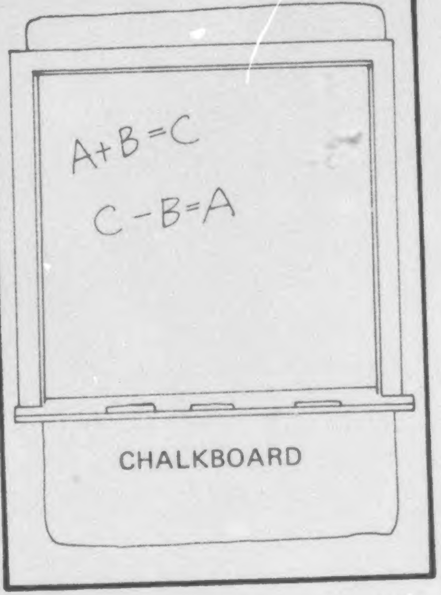


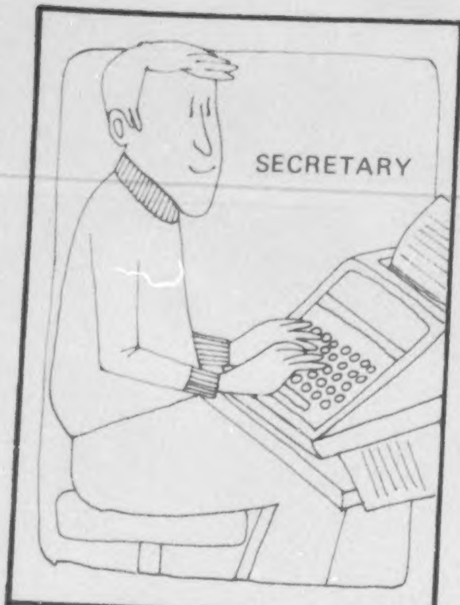

A+B=C
C-B=A
TEACHER

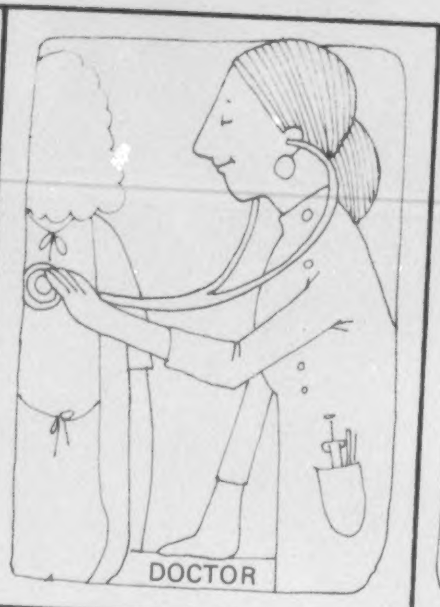

MAIL BOX
SMITH

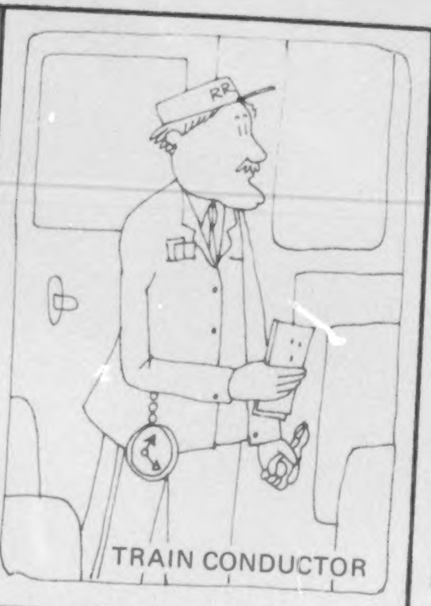

DAILY NEWS
NEWS
NEWSPAPER

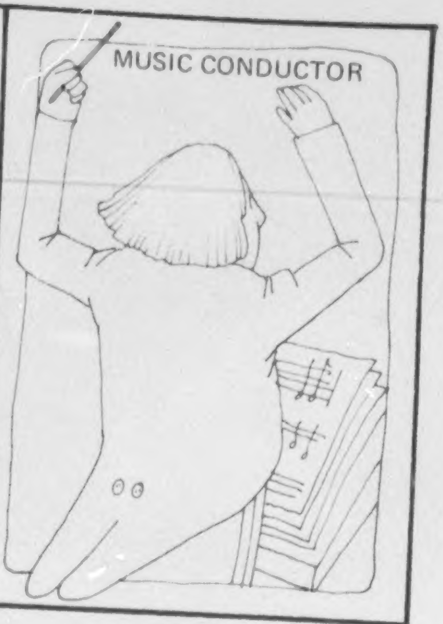
CUT
ON
←THICK LINES→

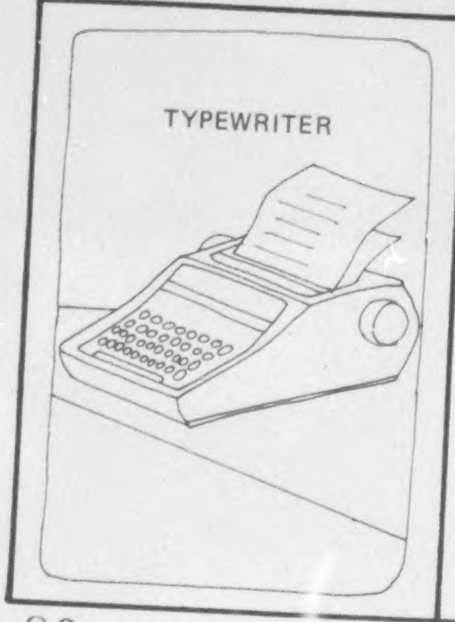

A+B=C
C-B=A
CHALKBOARD

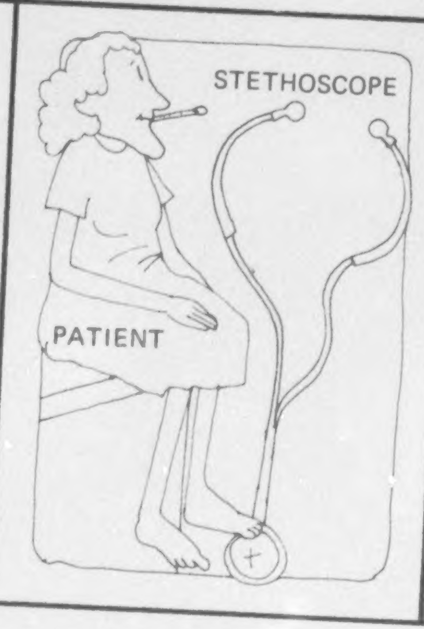

SECRETARY

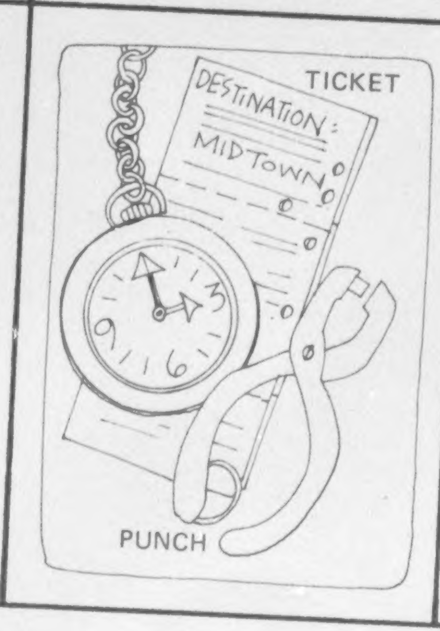

DOCTOR

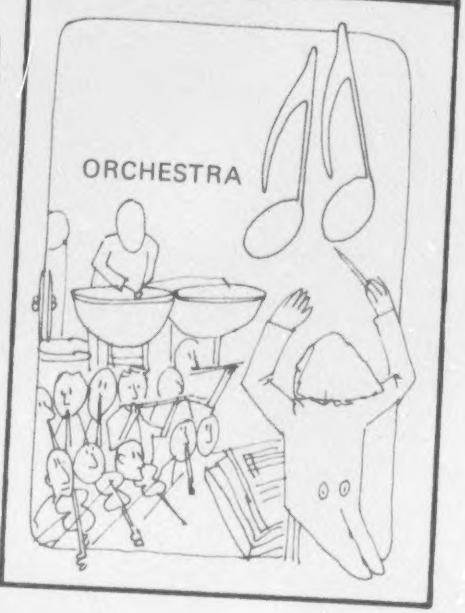

RR
TRAIN CONDUCTOR

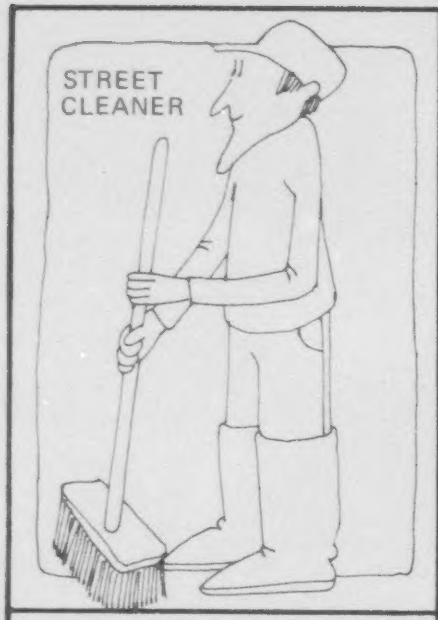

MUSIC CONDUCTOR


TYPEWRITER


STETHOSCOPE
PATIENT


TICKET
DESTINATION:
MIDTOWN
PUNCH


ORCHESTRA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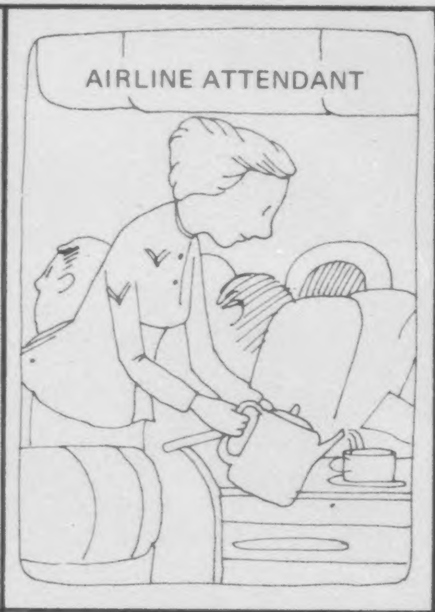
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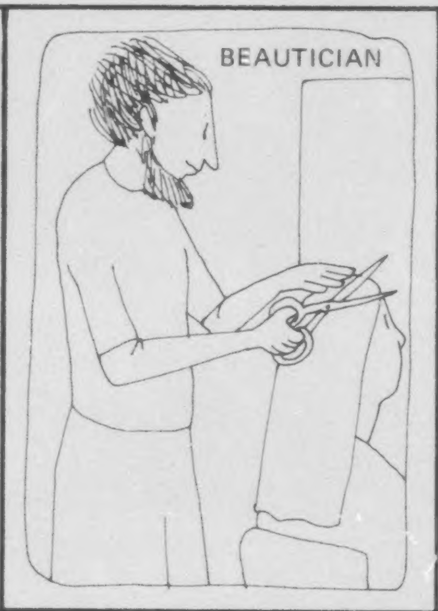
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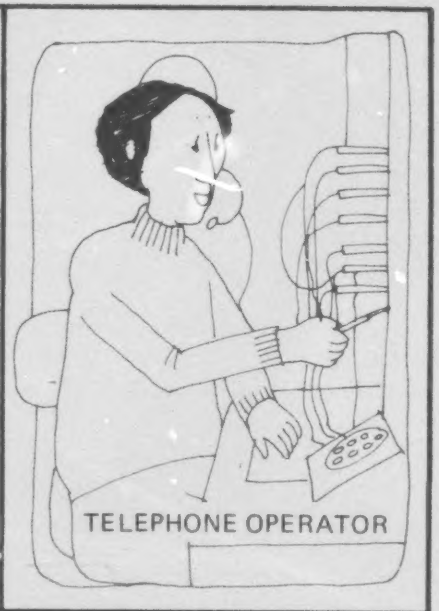
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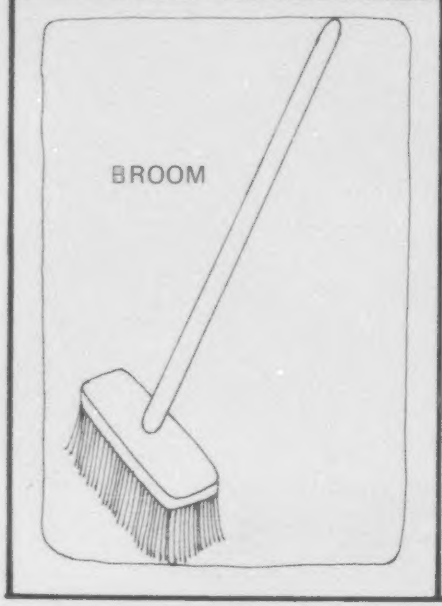
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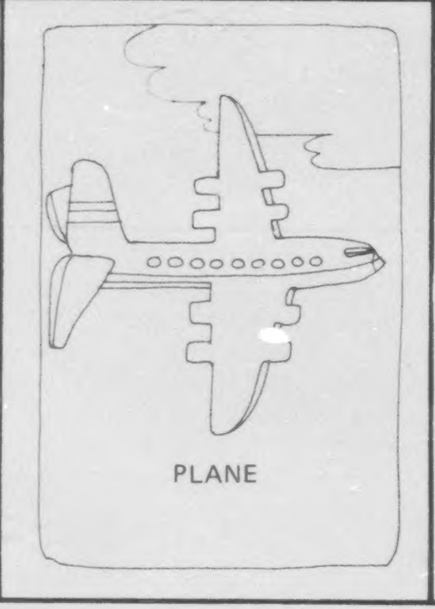
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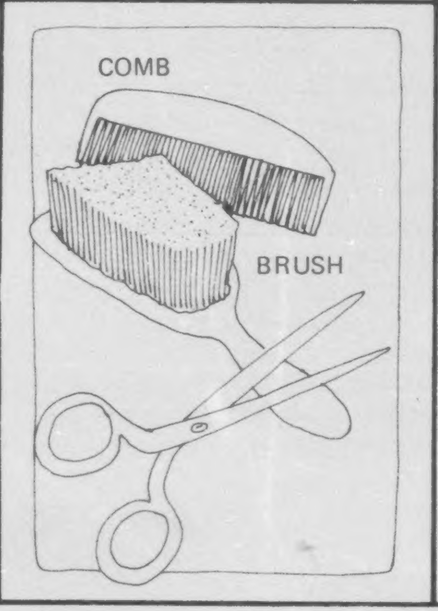
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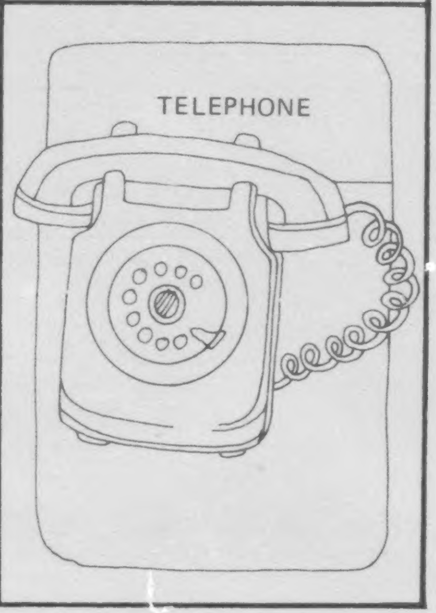
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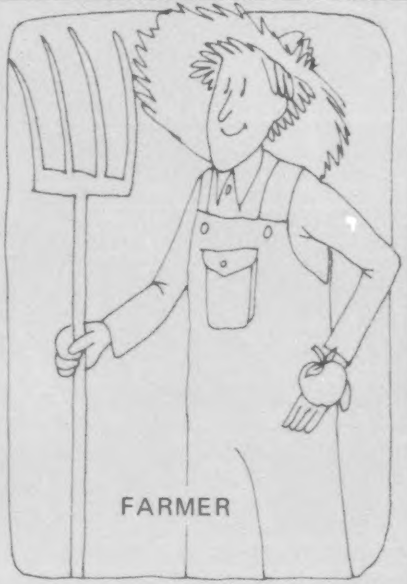
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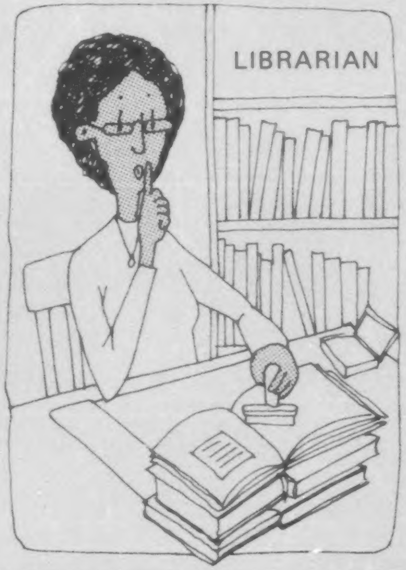
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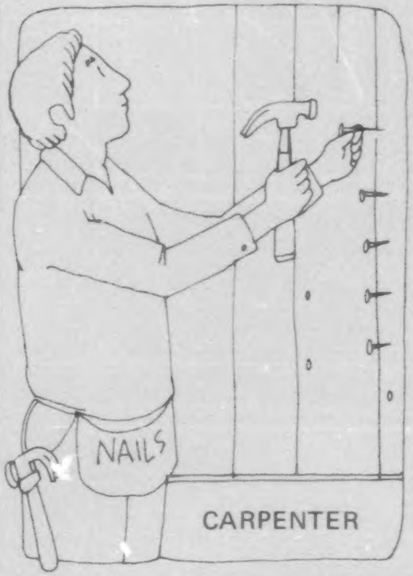
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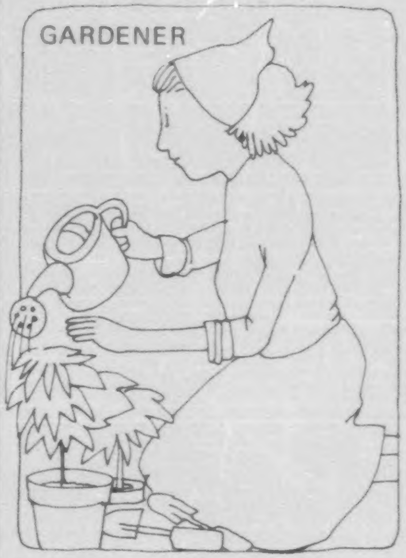
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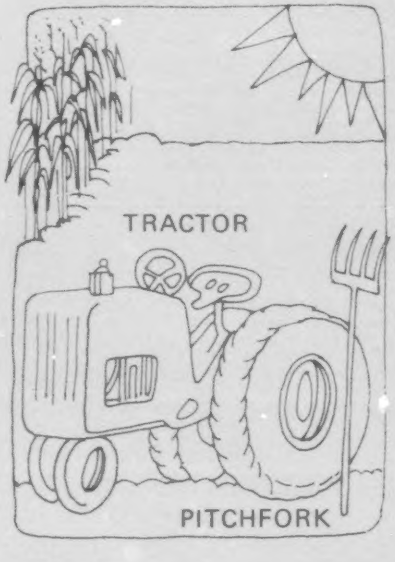
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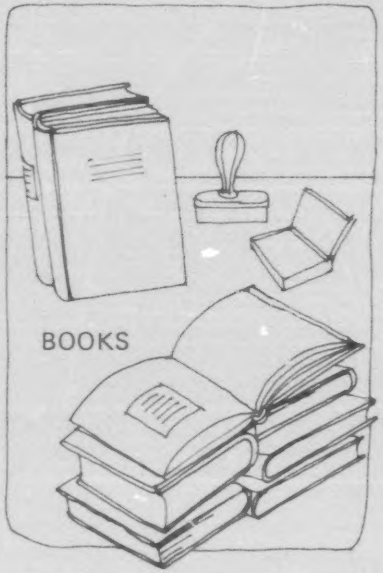
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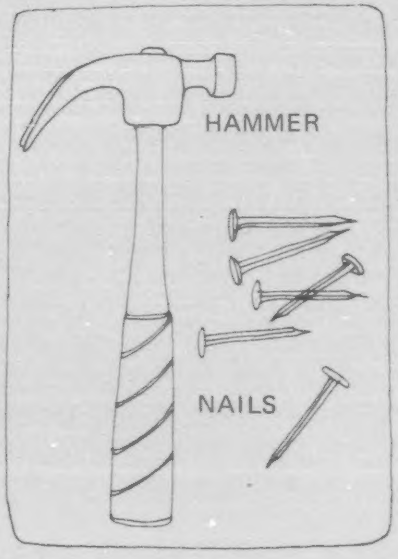
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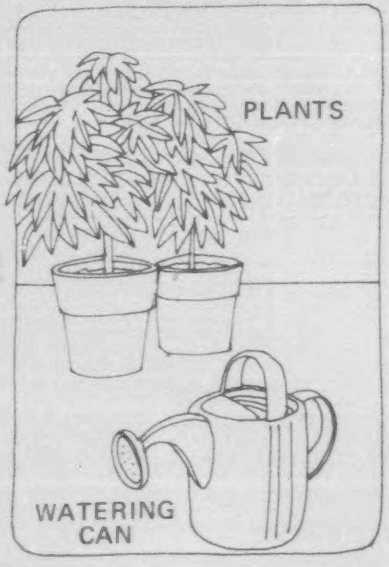
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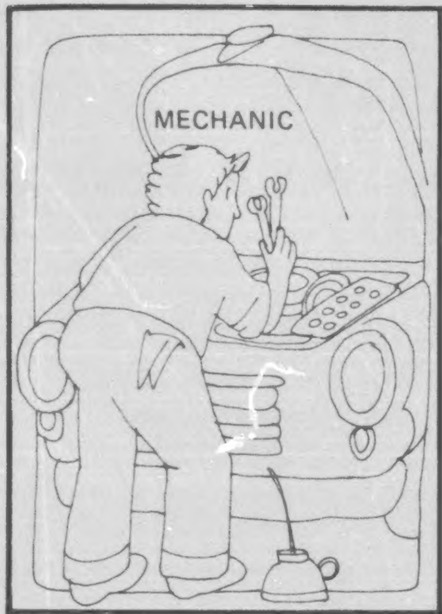
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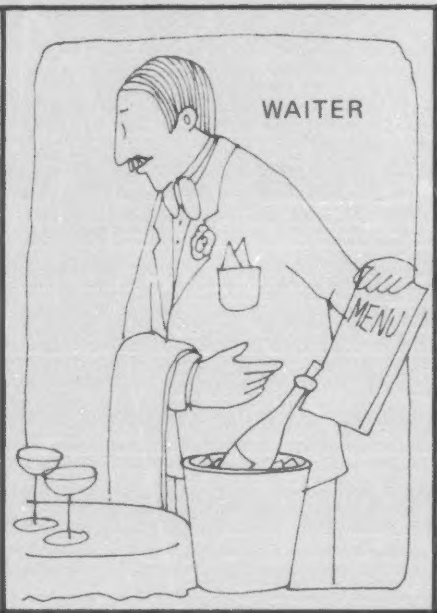
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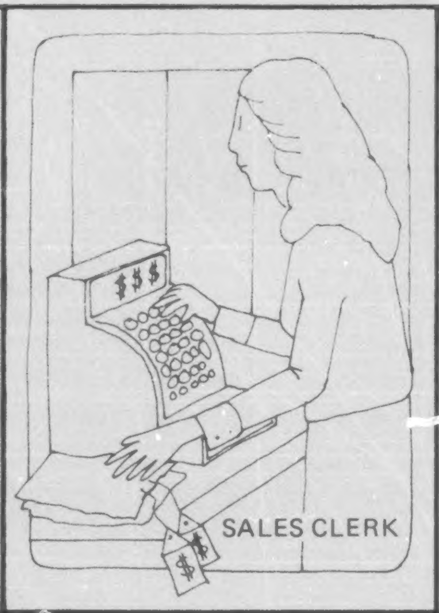
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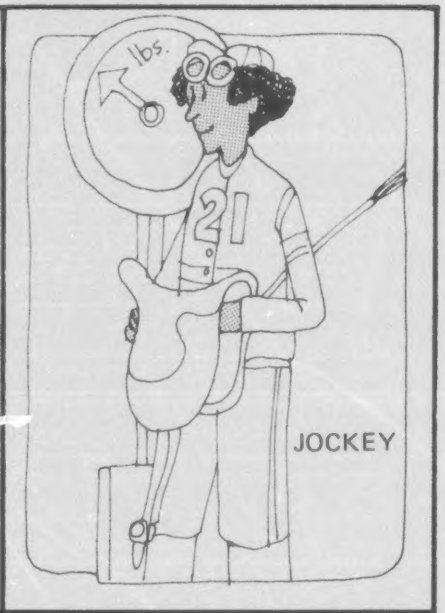
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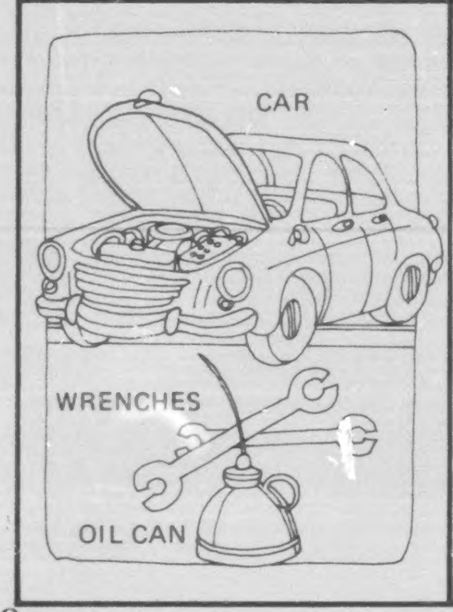
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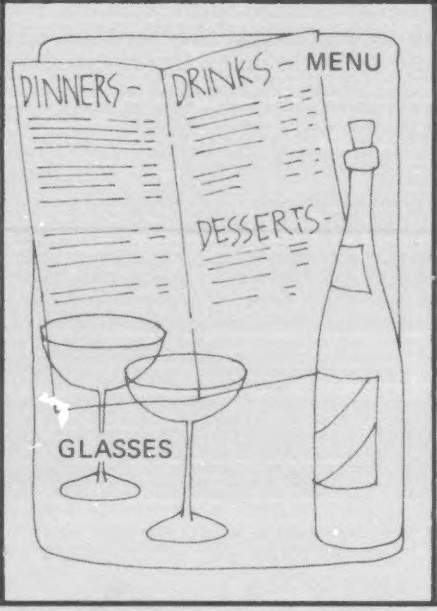
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DRINKS-
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DESSERTS-
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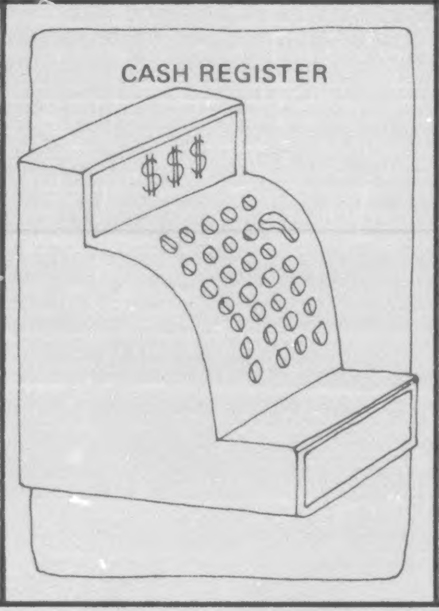
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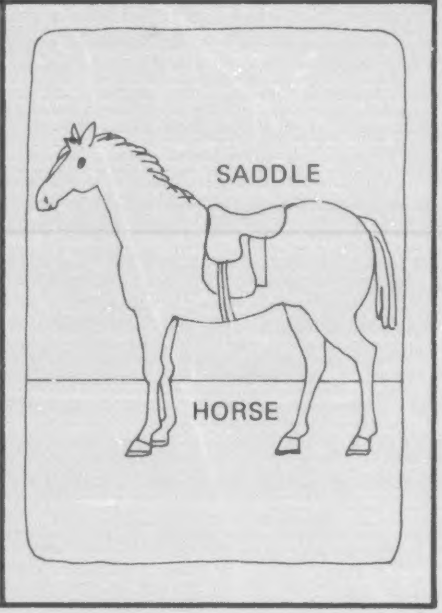
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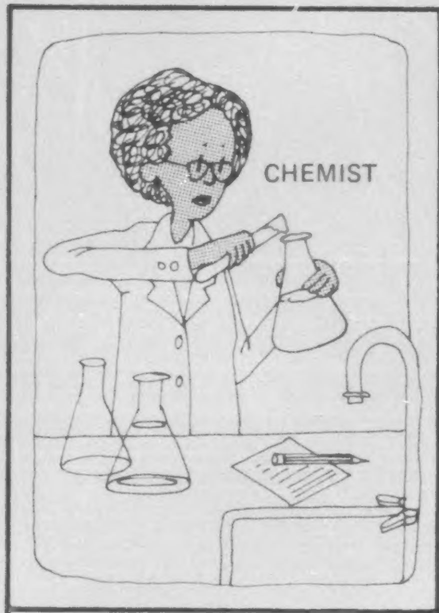
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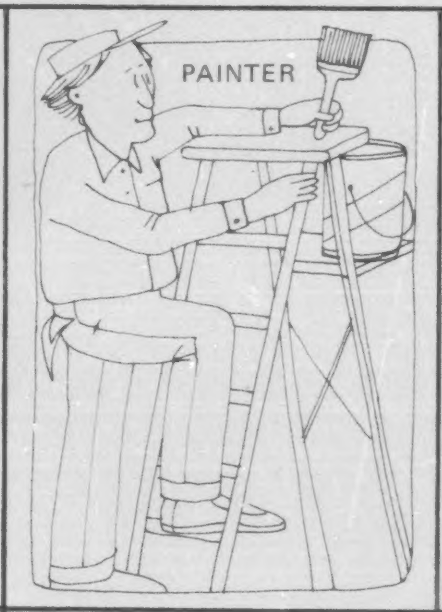
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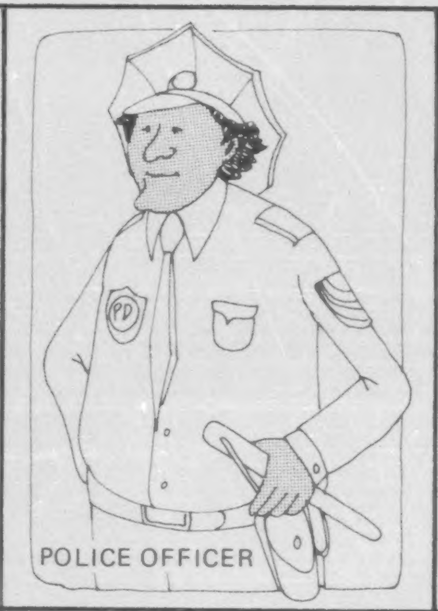
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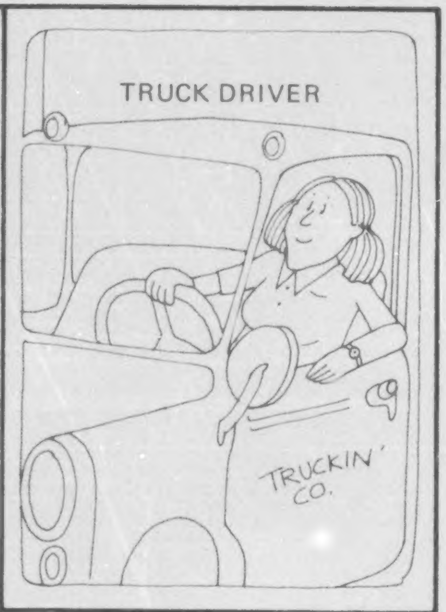
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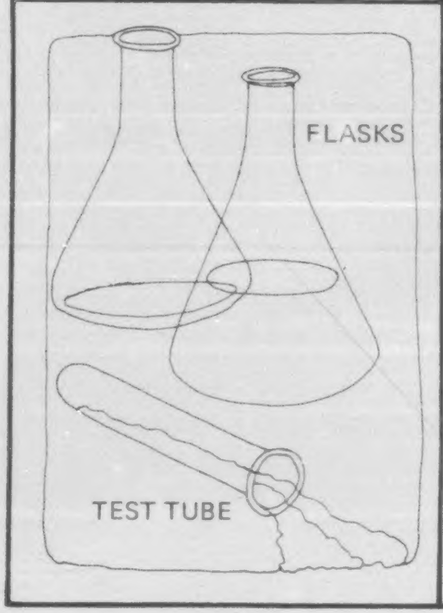
TRUCKIN' CO.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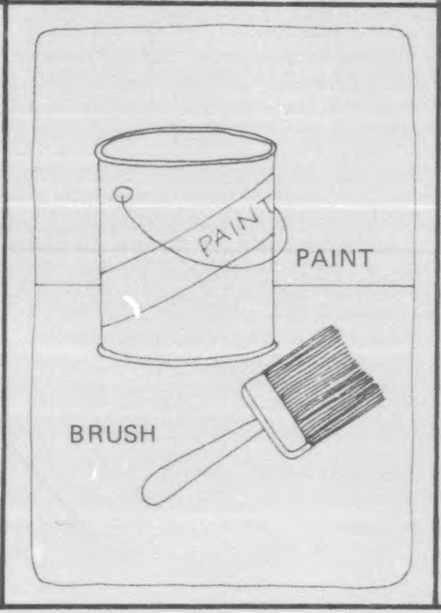
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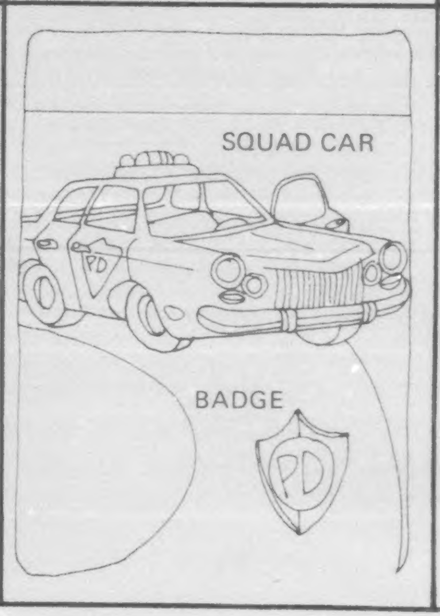
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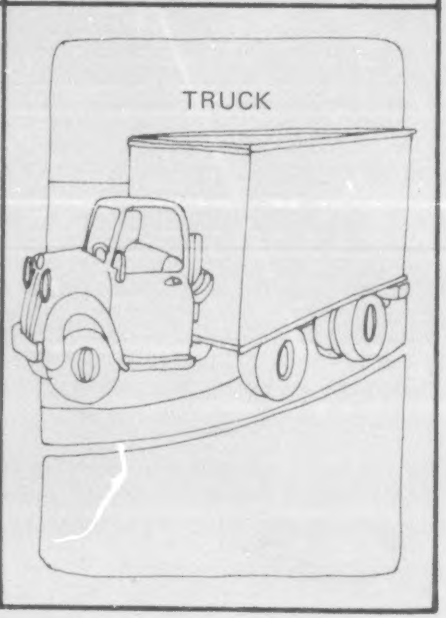
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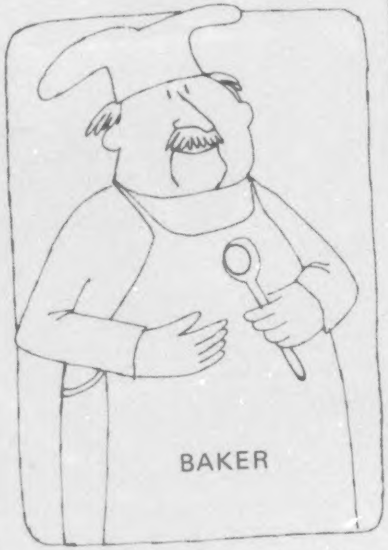
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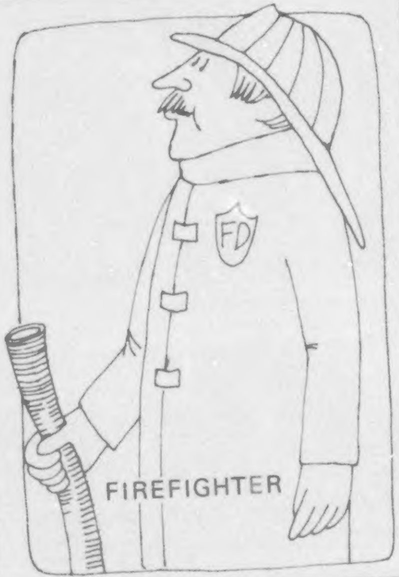
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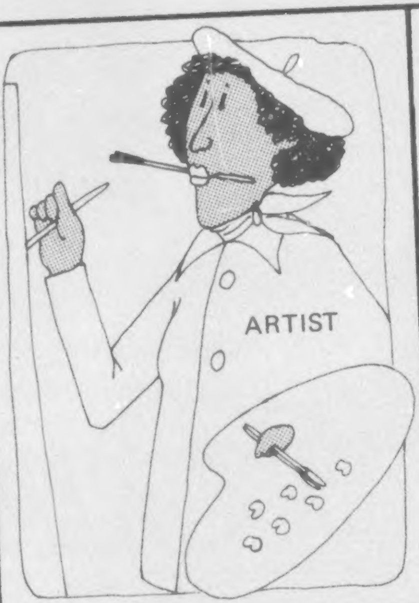
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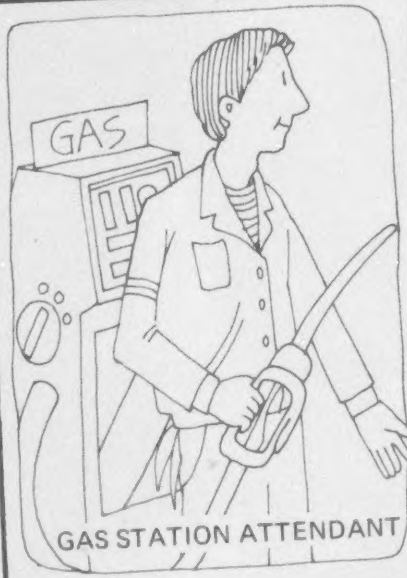
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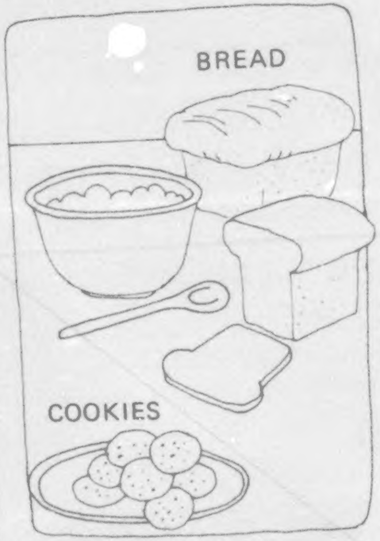
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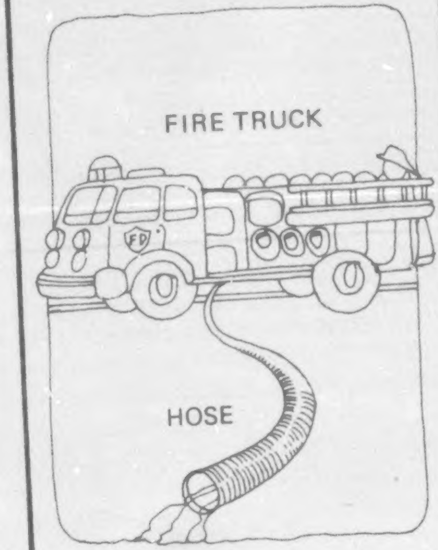
COOKIES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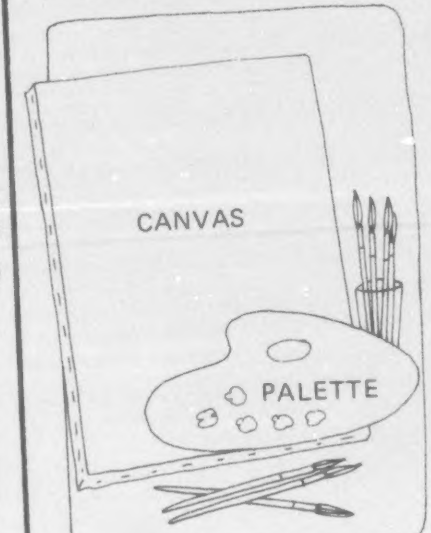
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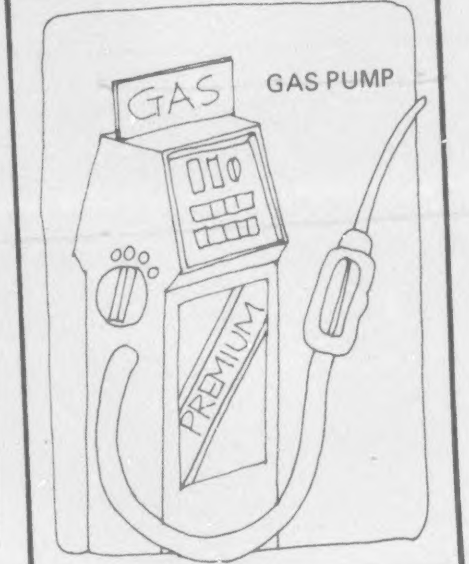

GAS
GAS PUMP
PREMIUM

FOCUS:

- Self-Awareness

LANGUAGE ARTS RELEVANCE

- Speaking
  - -- express feelings
  - -- describe

Activity #12

Subject Area:

Language Arts

"I AM ME"

Capsule Activity Description:

Students make "I Am Me" Books which express personal feelings and attitudes.

Teaching Prerequisites

materials: drawing paper, crayons
contacts with community: none
approximate preparation time: 1 hour
approximate class time: 3-4 classes

Language Arts Objective:

to develop speaking skills.

ACTIVITY

Unlike the other activities in this manual, this activity does not deal with specific occupations, rather it provides an exercise in self-awareness and understanding. It is important for students to know themselves and be able to relate this self-awareness to career preferences. It is also important for students to recognize differences among individuals and respond in a healthy, positive manner.

The "I Am Me" booklets can be integrated into your language arts curriculum anytime you are working with interpretation and for developing speaking skills.

Introduce the activity by discussing with the class how people differ from one another. Obvious physical differences (size, hair and eye coloring, sex) are discussed as well as differences in personality and intelligence.

Activity #12

Ask the students why they think people differ and what our world would be like if people were all the same. To aid your students in recognizing their own individuality, they compile "I Am Me" books.

Write the following on the chalkboard:

NAME:

SELF PORTRAIT

1. Draw a picture of you and your family.
2. Draw something you like to do.
3. Draw something you don't like to do.
4. Draw something you do well.
5. Draw something you can't do now but would like to be able to do when you are older.
6. Draw a picture of you working at home.
7. Draw a picture of you working at school.
8. Draw a picture of yourself in 20 years.

Distribute several pieces of drawing paper to each student to use in making the books. Explain that this is a very personal book as it is about only one person –– the student who is making it. Read aloud the tasks that have been written on the chalkboard, answering any questions students may have as you go along. Using drawing paper and crayons, students respond to the tasks with appropriate pictures of themselves. Initially you may wish to repeat aloud each task as students come to it and have them respond orally before proceeding with their drawings.

After the books have been completed discuss several of the tasks with the class. Students use their drawings as visual aids when discussing various points and issues.

- You are a member of a family. What does that mean? Do you have any responsibilities or special privileges because you are a family member? What jobs does each person perform in your family? What would happen if someone did not do his job?

To emphasize the place of the student in the family and his or her relation to other family members, role play the following situation. A student is asked to run an errand by various family members: parent, older sister/brother, younger sister/brother, grandparent. Keep changing the person asking the student to run the errand. After one series of role plays has been run through, ask the class to comment on how the student responds to other people and they to him or her.

- Do you talk to your grandparents differently than you do to your brothers and sisters? Why or why not?
- Do older brothers and sisters have more responsibilities than younger ones? Why or why not?
- When there is a family decision to be made, do you help make it? If the family wants a color television set who makes the final decision? If the whole family is going on an outing, who helps make the decision where to go?

Make three columns on the chalkboard: things I like to do, things I don't like to do, things I do well. Fill in the columns with the columns with the responses from students' books. As students give their responses orally, they also show their drawings. When the lists are completed, discuss the variety of answers as well as the differences and similarities among them.

- Why do you like some things and dislike others?
- To like something, do you have to be able to do it well?
- If you do some things well, does that mean you like them? Name one thing you do well that you don't like.
- What would happen if everyone liked or were good at the same thing? . . . everyone wanted to be a doctor or everyone were really good at throwing a baseball and wanted to be a pitcher?
- When you think about what you want to be when you grow up, what things about yourself should you look at?

Ask several students to show their drawings made in response to tasks 6 & 7. Ask them to explain the differences, if any, between working at home and working at school.

- Which kind of work is more fun? Why?
- When you work at home who are you helping? What about at school?
- Are there different kinds of work? Is the work I do as a teacher different from the work I do cleaning my house?
- Why do we have to work?

Ask students to show and describe their drawings to task 8.

- What do you think you will be like in 20 years? Why?
- Where might you be living? Will you have a family or will you be single? Why?
- What is the most important thing to you now? What will it be in 20 years?

Display the "I Am Me" books on the bulletin board. When you change the bulletin board, you may want to keep the books -- for future reference.

Useful Prior and Subsequent Activities

- This activity can be used at the beginning of the year and again at the end of the year to see how feelings and attitudes have changed.
- Students can write poems describing themselves.

Resources:

Books:
- **A Book About Me**
  Science Research Associates, 259 East Erie Street, Chicago, Illinois 60611
- **What Could I Be**
  Science Research Associates, 259 East Erie Street, Chicago, Illinois 60611

Activity #12

- **Becoming Myslef**
  George A. Pflaum, Dayton, Ohio
- **Here I Am**
  ibid.
- **I'm Not Alone**
  ibid.

Filmstrips:

- "Working Together in the Family,"
  Society for Visual Education, Inc.,
  1345 Diversey Parkway, Chicago, Illinois 60614
- "Me, Myself and I,"
  Eye Gate House, Inc., 146-01 Archer Ave.,
  Jamaica, New York 11435
- "Who Do You Think You Are?"
  Guidance Associates, Pleasantville, New York
  10570

Films:

- "Our Family Works Together,"
  Coronet Instructional Films, Coronet Building,
  65 East South Water Street, Chicago, Illinois
  60601
- "Children at Work,"
  United Worlds Films, Inc., 1445 Park Avenue,
  New York, New York 10029

Records:

- "Free to Be You and Me,"
  Marlo Thomas, Bell Records
- "Self-Image,"
  Bowmar, 622 Rodier Drive, Glendale,
  California 91201

Comments from Teachers and Students after Using the Activity:

OCCUPATIONAL FOCUS:

- Teacher
- Self-Awareness

LANGUAGE ARTS RELEVANCE

- Speaking
- Listening

Activity #13

Subject Area:

Language Arts

SHARE AND TEACH

Capsule Activity Description:

Students explain and/or teach the skills involved in a hobby or a special area.

Teaching Prerequisites:

materials: none
contacts with community: invite another teacher or parent to speak to the class
approximate preparation time: 1-2 hours
approximate class time: one to two classes

Language Arts Objectives:

to develop speaking and listening skills.

ACTIVITY

The purpose of this activity is to explore and share student skills, at the same time exposing students to the teaching profession. By examining their own skills and interests and those of others, students begin the process of relating these same skills and interests to career preferences and decisions. The activity can be integrated into your language arts curriculum at any time as it develops both listening and speaking skills.

Discuss with the class the meaning of the word skills by exploring areas of student competence: riding a bicycle, hitting a ball, drawing, reading, writing, etc. Emphasize that not all people are proficient in all areas but they still can have fun doing these things. Choose one or two skill areas –– riding a bicycle, learning to add –– to explore with the class.

Activity #13

- How did you learn to ride a bicycle?
- Did you have to practice?
- Did you start out on a two wheeler or did you learn on a smaller bicycle with more wheels?
- Once you learned to ride well, did you try new things on your bicycle: riding with no hands, going faster, carrying groceries.
- Have you ever tried to teach someone else to ride a bike? Was it hard to teach someone else a skill at which you were good? How did you try to help the other person? What happened?

Invite to class a teacher who has skills in physical education, art, or music, etc. to discuss how he or she became interested and proficient in the particular area of expertise. A parent who teaches or has a hobby (carpentry, pottery, music, weaving, dance, etc.) that he or she has taught is also an ideal guest speaker for this activity. Request that the guest cover the following points:

Skills

- How he or she became interested in the profession or hobby.
- How the necessary skills were developed (training, practice, etc.).
- What rewards can be gained by knowing these skills?

Teaching

- Does he or she enjoy teaching these skills to other people?
- What had to be learned to teach them?
- How is teaching different from learning?

Also request that your guest speaker demonstrate his or her skills to the class with as much active participation from students as possible.

Students choose a hobby or skill area they are somewhat proficient in (e.g., art: how to make paper flowers; dance: how to tap dance; sports: how to ski, how to hit a curve ball) to present to the class. This can be done by all the students or on a volunteer basis. The following points are covered in the presentation:

- How the student became interested in the skill.
- How he or she learned the skill.
- Demonstration or explanation of how the skill or some aspect of it is done.
- Questions and answers

If students wish, they can make up a test to give to the class regarding the presentation, or comment on the class products which result from the "lesson."

Props may be used to aid students in teaching the lesson. Also remind students to practice giving their presentation at home.

After the presentations the "student teachers" comment on their performance and react to the following questions:

- Did you like teaching a lesson? Why?
- Was it frustrating or easy for you?
- If you were to teach a lesson again tomorrow, would you do anything differently?
- Did it bother you when students weren't listening to you?
- Did you feel you had something important to share with the class? Why?
- Do you think it is important for people to have good skills in different areas? Why?

Useful Prior and Subsequent Activities:

- You can invite other teachers and parents to class to share their skills in areas of interest to the student.
- As students learn new skills they can share them with the class in a manner similar to that described above.
- Students can set up learning centers in the classroom where they can teach their skills (e.g., baseball clinic, dance clinic, ceramic class).

Resources:

Books:

- **I Know a Teacher,** Naomi Buchheimer,
  G.P. Putham & Sons, 200 Madison Avenue,
  New York, New York 10016
- **About School Helpers,** Hoffman & Hefflefinger,
  Melmont Publishers, Inc., 1224 West Van Buren St.,
  Chicago, Illinois 60607
- **I Want to Be a Teacher,** Carla Greene,
  Children's Press, Inc., 1224 West Van Buren St.,
  Chicago, Illinois 60607

Filmstrips:

- "School Helpers,"
  Eye Gate House, Inc., 146-01 Archer Avenue,
  Jamaica, New York 1 435
- "The School Community,"
  Encyclopedia Britannica Educational Films,
  425 North Michigan Avenue, Chicago, Illinois
  60611
- "Getting to Know Me Series," R.C.A.'s Films,
  1696 N. Astor St., Milwaukee, Wisconsin 53202

Comments from Teachers and Students after Using the Activity:

Activity #14

Subject Area:

Language Arts

HARD HATS

OCCUPATIONAL FOCUS:

- Construction Jobs
  Laborer, welder, mason, carpenter, plumber, electrician

LANGUAGE ARTS RELEVANCE:

- Listening
- Speaking
- Notetaking
- Interpretation

Capsule Activity Description:

Students learn about the construction industry, observing and interviewing workers employed in these occupations.

Teaching Prerequisites:

materials: tape recorders (optional), drawing paper, crayons, large pieces of cardboard, paint, copies of class questionnaires
contacts with community: visit to construction site
approximate preparation time: 1-2 hours
approximate class time: 3-4 classes

Language Arts Objectives:

to develop communication and listening skills and the ability to record appropriate and accurate information on a given topic.

ACTIVITY

Construction is a large and active industry, one which lends itself to study because of its visibility in the community. This activity asks your students to develop questions to use while interviewing various construction workers, then asks them to transfer that knowledge to a building of their own.

The activity can easily be integrated into the language arts curriculum at almost any time as the exercises relate to two of the three major language arts skills: listening and speaking (when the activity is used with older elementary level students it also involves writing). Specifically, the activity can be integrated whenever you take up the skills of questioning, listening, and notetaking. The students develop a questionnaire to be used in their interview sessions and notes are taken on the responses, either in writing or on tape. By transferring this knowledge to a class presentation, the students come to recognize the need for accurate and useful information gathering, developed by language arts skills.

Ideally the activity involves groups of students observing and interviewing different workers at a construction site (each group observes and interviews **one** worker). Most communities have construction going on at one time or another throughout the year making a local field trip feasible. Contact the builder or construction company handling a local "job" to inquire if a field trip can be made to their site and to explain the nature of your visit. (A sign is posted at most sites indicating the company doing the work.) If parents are employed in this type of work you might find it beneficial to call them for assistance in making the appropriate contact. (See chapter on "Liaison" in the "Resources" section at the back of the manual.)

If your trip is approved, it is necessary to find out from the company specifically what workers your students can interview at the site (i.e., laborer, welder, mason, carpenter, plumber, electrician, etc.). When you have your list, divide your class into groups and assign a different occupation to each group. Review occupational titles and new vocabulary with the class as a whole and discuss, in general terms, the construction of a building. Mention that not all the people who help build a structure are at the site. Architects and engineers work many hours planning a building long before the hole is dug for the foundation.

The interview questionnaire can be developed in one of two ways.

- Each group can "brainstorm" for questions to ask during the interview and design their own survey instrument.
- The class, as a whole, brainstorms for questions and develops a questionnaire for use by each group on the field trip. (This may be the better option for younger students.)

Each student or pair of students is given one or more questions to ask the worker during the interview. A tape recorder is particularly helpful to younger students in gathering and retaining their interview responses. If a tape recorder is unavailable, a parent or chaperone acts as group recorder.

Older elementary students fill in the questionnaire themselves. The student who is responsible for asking a question is also responsible for recording the answer. In this case, tapes are used **only** as backup for the completed questionnaires. They are, however, a very valuable addition to a career education library.

After the field trip group presentations are made to the class. Two options are presented below, the first for primary and the second for upper elementary level students.

Primary Level Option

Working in their same groups, each student is given a piece of drawing paper with the question(s) he or she asked the worker printed at the top. Beneath the question the student draws the answer. The tapes or written notes can be referred to for help. When the students have completed their drawings, each group makes its presentation to the class.

With the group standing at the front of the room holding their drawings, one student tells the class the name and occupation of the worker they interviewed. In turn, students read the questions at the top of their drawings (or it is read for them) and give their responses, using their pictures as visual aids.

At the conclusion of the presentation another student, speaking for the group, tells the class what they thought of the job and why. The class then comments on the presentation and asks any questions it may have.

When all the presentations have been made, the class discusses the field trip in light of the following issues.

- What kind of person should you be to be a construction worker?
- Would you be interested in this kind of work when you grow up? Why?
- If you are a woman and wanted to work in the construction industry, do you think you would have any trouble getting a job? Why?

Upper Level Option

Working in groups made up of one student from each old group, the students construct buildings similar to the one they visited or one the class is familiar with. The buildings can be made out of cardboard boxes, drawn on paper, or in any medium suitable for your students. Each student assumes the role of the worker he or she interviewed and contributes that same work to the project.

The groups establish a logical progression for the work so that not everyone is "building" at the same time. While a student is working, he or she is also explaining to the other members of the group his or her occupation as it was understood from the interview. The description of the worker's job draws on information gathered from the interview.

One student in each group is selected by you to "go out on strike." When it is his or her turn to work, he or she refuses and "walks off the job." When this happens, tell the other students that they must "negotiate" with this person to get him or her back to work. The worker will come back for one of three things: better pay, more benefits, better working conditions. The student may choose which of the three he or she wants. Allow five minutes or so for these negotiating sessions. Since the groups have all been given a deadline for completion of the buildings, this work stoppage will hold them up and make them realize more clearly the various kinds of problems encountered in the working world.

When the buildings are completed they are put on display with markers indicating work done by each construction worker.

To conclude the activity, as a class discuss the following issues based on the field trip **and** the group projects.

- What was it like to work as a member of team constructing a building?
- Did you expect certain things of one another?
- How did you react to the worker who went out on strike?
- Why are there so many men employed in this field? Do you think women can do these jobs?
- What kind of person do you have to be to be a construction worker?

Option: If a field trip is not possible, contact a construction company (look in the yellow pages or speak to your principal for possible contacts) to inquire if they could send one or several different workers to your class as guest speakers.

Also, parents, school teachers, friends are all possible resources. Many of these people are working or have worked construction – tap them.

If you go this route, you will not need group questionnaires as the class will be learning together about all the occupations. The question developing sessions are still possible, however, as are the presentations. In the latter case, simply assign questions and/or occupations to students and continue the activity from there.

Activity #14

Useful Prior and Subsequent Activities:

Prior:
- Review vocabulary with class
  - titles of workers to be interviewed
  - wages/salary
  - benefits
  - working conditions
  - strike
  - union
  - negotiate
  - Students role play an interview to prepare for field trip. Stress and encourage students to be well prepared, to speak clearly and to listen carefully.

Subsequent:
- Architect can visit class to explain his or her role in the construction of a building.
- Each group can make a presentation to another class, explaining what goes into the construction of a building and who does it.

Resources: Parents, co-workers, friends, local construction/building companies.

King Comics: "Popeye & Construction Careers"

Books:
- *Labor Unions in the United States,* Carolyn Sims
- *Tools for Building,* Jerome Leavitt, Children's Press, Inc., 1224 West Van Buren Street, Chicago, Illinois 60607

Films:
- "The City," Encyclopedia Brittanica Educational Films, 425 North Mighigan Avenue, Chicago, Illinois 60611
- "Building a House," *ibid.*
- "Let's Build a House," Churchill-Wexler Film Products, Los Angeles, California

Filmstrip:
- "The Story of Building a House," Eye Gate House, Inc., 146-01 Archer Avenue, Jamaica, New York 11435

Pamphlets:
- "Bricklayers" (Occupational Brief #22), Science Research Associates, Inc., 259 East Erie Street, Chicago, Illinois 60611
- "Carpenters" (Occupational Brief #23), *ibid.*

Comments From Teachers and Students After Using the Activity:

SAMPLE QUESTIONNAIRE

Name of Worker:
Occupation:

1. What do you do on the job?
2. Did you receive special training for this job? If so, what kind?
3. Do you work alone or with other people?
4. What do you do when the weather is bad?
5. Do you work long hours? Do you ever work Saturday or Sunday?
6. Why did you decide to be a ____________?
7. Do you like your job?
8. Do you think you will do this for the rest of your life?
9. If you could do anything else for a living, what would it be?

OCCUPATIONAL FOCUS:

- General Career Awareness

LANGUAGE ARTS RELEVANCE:

- Listening
- Speaking
- Observation
- Recall

Activity #15

Subject Area:

Language Arts

ASSOCIATION

Capsule Activity Description:

A game played by teams, the object of which is to guess the tool or object being described and the occupation associated with it.

Teaching Prerequisites:

materials: 1 paper bag containing slips of paper with occupational titles, 2 empty paper bags
contacts with community: none
approximate preparation time: 30-60 minutes
approximate class time: 1 class

Language Arts Objective:

to develop listening, recall and communication skills.

ACTIVITY

This activity is a fun and exciting way to develop listening skills and at the same time to acquaint students with many occupations. No one occupation is dealt with in detail: rather students get an overall sense of the wide variety of careers available to them in the world of work. Depending on your students and their familiarity with career education, you may wish to use this activity either as an introductory exercise or as a review mechanism.

The activity can be integrated into the language arts curriculum when you are working on listening skills. Since the activity is primarily a guessing game with clues given verbally, all the students (except for the one giving the clues) participate by listening, thus reinforcing that skill. The game also benefits communication skills as it requires students to describe various objects as clearly and accurately as possible in order for the object to be guessed and points won for the team.

As a class, list several occupations and their respective objects or tools (two per occupation if possible) to be used in the game. For students who are unfamiliar with some of these tools/objects, a picture would be a helpful addition to the list. If this is to be an introductory lesson, the list can be left on the chalkboard. If, on the other hand, it is a review exercise, the list might be erased from the chalkboard, and it may not need to be discussed at all.

Procedure:

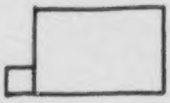
- Divide the class into two teams.
- The paper bag containing the slips of paper with occupational titles is passed around the room and each child takes a slip.
- Beneath the occupational title each child writes/copies down the name of one tool or object associated with the occupation chosen. The teams put their slips of paper into a team bag.
- Two students from one team volunteer to start the game. One student draws a slip of paper out of the opposing team's bag, while the other goes to the chalkboard. He or she does not know what tool object the partner has drawn. (**Only** the student drawing the slip knows what it says.)
- The student holding the slip of paper proceeds to describe the tool/object for the student at the chalkboard, who draws it as it is being described. Only the shape of the object is described, not its nature. (Option: if your students find it too difficult to describe the object by its shape, it can be described by its nature or some other means.)

For example, truck – truck driver.

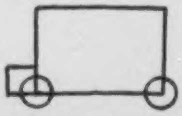
Draw a large rectangle.

Draw a small square and attach it to the front of the rectangle.

Now move the small square down so its bottom line is even with the bottom line of the rectangle.



Draw two circles – one at bottom left corner of the rectangle and one at the bottom right corner.



- The other members of the team try to guess the tool or object being described and drawn and the occupation related to it. Team members are allowed to guess while the drawing is in progress. The student describing the tool/object may only respond with a "yes" or "no" to team guesses.
- If the tool or object is guessed correctly the team is awarded two points. If both the tool/object and occupation are guessed correctly, the team is given three points.
- The game continues, alternating one team and then the other. All students get a turn either describing or drawing.
- The team with the most points wins.

Useful Prior and Subsequent Activities:

Prior: • See Activity #11

Subsequent: • Students can compare occupations of today with occupations of the past and of other societies.

Resources: Magazines (to find pictures of objects/tools) can be obtained from doctors' offices or brought in from home by students and school personnel.

"Home & Community Helpers Teaching Pictures," David C. Cook Publishing Co., Elgin, Illinois

Slides: Bureau of Labor Statistics, Department of Labor, 441 G Street, N.W., Washington, D.C. "Jobs for the '70's."

Comments From Teachers and Students After Using the Activity:

Possible List of Tools/Objects and Occupations

Doctor – stethoscope, thermometer
Artist – easel, paint brush
Mailperson – letter with stamp, mailbox
Garbage collector – trash can
Baker – cake, stove
Dentist – tooth, toothbrush
Farmer – rake, tractor
Forest Ranger – tree, axe
Bank teller – money, safe
Barber – scissors, comb
TV repairperson – television, screwdriver
Telephone operator – telephone, earphone
Librarian – book, shelf
Florist – flower, pot
Truck driver – truck, road
Jockey – house, saddle
Football player – football, goal posts
Firefighter – fire, hose
Teacher – chalkboard, pencil

Activity #16

Subject Area:

Language Arts

A COMMUNITY PROBLEM

OCCUPATIONAL FOCUS:

- Community Service Workers
  - Police Officer
  - Firefighter
  - Garbage Collector
  - Public Health Nurse
  - Street Cleaner
  - Teacher
  - Mayor
  - Secretary
  - Bus Driver

LANGUAGE ARTS RELEVANCE:

- Speaking Skills
- Decision-Making

***Capsule Activity Description:**

Class produces a play about community service workers.

Teaching Prerequisites:

materials: props (see text), copies of play
contact with community: none
approximate preparation time: 1-1½ hours
approximate class time: 2-3 classes

Language Arts Objectives:

to develop speaking skills;
to better understand the decision-making process;
to learn to work as a member of a group.

ACTIVITY

This activity introduces students to community service workers in play form. Taking the parts of various city officials, workers, and citizens, students act out a problem that is common to many communities.

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*This activity has been revised from an activity developed by Winifred Hauser. We are grateful for permission to use it. The original activity is part of *A Guide for Developmental Vocational Guidance K-12*, Oklahoma State Department of Education (Stillwater, Oklahoma: 1973) which may be ordered from Oklahoma State Department of Vocational & Technical Education, 1515 West Sixth Avenue, Stillwater, Oklahoma 74074 for $2.00.

Activity #16

Integration of the activity into your curriculum can come when developing speaking skills. A play gives students an opportunity to speak in front of a group but gives them security in being part of a larger whole. It also gives them a chance to express themselves in ways that are not always available in the everyday classroom experience.

The play can be performed in several ways depending on how much time is available and the needs and abilities of your students.

1. The parts are read by students using only a few tables and chairs at the front of the room as props.
2. Students memorize their lines, make costumes appropriate to their part, and use more elaborate props.
3. Combine options 1 and 2 in a way that is convenient and suitable for your class.

Whichever option you choose, consider inviting another class to watch the performance. Again this is a decision which is made in light of your students.

List of Characters

- Announcer
- Mayor
- Council Members (5)
- Secretary
- Police Officer Phil
- Police Officer Janice
- Firefighter Dick
- Firefighter Gail
- Garbage collector
- Street cleaner
- Nurse
- Bus driver
- Teacher
- Business people (5)
- Citizens (6)

Setting:

Council Room in City Hall. A long table is off center stage at an angle. The chair for the Mayor is at the end facing the audience. Five other chairs are on the two sides of the table. There is a door at the side of the stage. Near it are a small table and chair for the secretary.

(Announcer and Mayor Enter)

Announcer: Like many other cities in our country ours has a problem – we are spending more money than we have. We must find ways to save. Our Mayor and City Councilors have called this hearing today to see if we can save any money by eliminating the jobs of some community workers.

Mayor: (sternly) As Mayor of this city, it is my duty to spend taxes wisely, but at the same time provide for the needs of our citizens. My council will be here soon and we will decide which of our city's workers are not necessary. There must be some place among the Police Department, Fire Department, Sanitation and School Departments that we can come up with some savings – **we just cannot raise taxes again.**

(Council Members enter in a line followed by the Secretary. Council takes seats at long table, secretary sits at own table next to Mayor.)

Secretary: Your Honor, there are two police officers waiting outside. They wish to tell you and the Council why they are necessary workers in our city.

(Police Officers enter and stand in front of Mayor's table.)

Police Officer Phil: (pitifully) Your Honor and Members of the City Council, Chief O'Brien has sent us to tell you what would happen to our city if you decided the Police Department was no longer necessary. There would be no one to direct traffic. There would be no one to show the jaywalkers where to find the crosswalks. Who would stop the speeding drivers? Just think what would happen to our children on their way to school if people started driving through traffic lights. Our city would be a mess!

Police Officer Janice: (determined) If there were no police force, who would catch the robbers, who would protect our citizens' property and rights? Who would look for lost children? Our city would be a shambles without a good, strong police force.

Council Member 1: (jumping up and almost shouting) Your Honor, they are right. The police force is important to our community. Our citizens must be kept safe.

(Other Council Members nod approval whispering agreement among themselves.)

Mayor: Yes, you are right. We should look somewhere else to save money.

(Police Officers Exit.)

Secretary: (standing) Your Honor, there are two firefighters here who would like to talk to you.

(Firefighters enter and stand in front of Mayor's table.)

Firefighter Gail: Your Honor and Members of the City Council, we have come to tell you why we think the Fire Department is necessary for our city. Our business is to put out fires and we know the quickest and best way to do it. We have gone to a school where we were taught how to fight fires – we keep up with the newest techniques – we are good at our job.

Firefighter Dick: I know that many of you have visited our station. It is spotless. Our trucks, hoses, and tools are in perfect working condition. In a minute and half after the alarm sounds we are on our way to the fire. Can you imagine what this city would be like without a Fire Department? I know I would be afraid to live here.

Council Member 2: We had a fire at our house last year. Without the Fire Department our house would have been lost. We need the Fire Department.

Activity #16

Mayor: The Fire Department is obviously not a place where we can cut things out.

(Firefighters leave, thanking the Mayor as they go.)

Secretary: (standing) Next we have a representative from our Department of Public Works, your Honor.

(Garbage collector enters followed by street cleaner. They stand in front of Mayor's table.)

Garbage collector: (matter of factly) My job is one that lots of people **don't** want, but it is a very important one. If my fellow workers and I don't empty the garbage into our special closed trucks and carry it away, just think what a problem everyone would have. You remember the problems we had in the last garbage strike. Rats were everywhere, the cockroaches started to take over, and the smell was so terrible you didn't dare breathe.

Council Member 3: We can't afford to have our garbage pile up because we got rid of all the garbage collectors. Cutting out the garbage collectors would be very costly indeed.

(All Council Members nod in agreement.)

Street Cleaner: (sadly) You know how Americans are about keeping their streets and countryside clean. It is very sad to think they can't wait to get home to throw something away. Instead, people litter the ground knowing that I will be along behind them with my broom and shovel to pick up their trash. Unfortunately there are more litterers than street cleaners. Without me and the people I work with our city would *never* be clean.

Council Member 4: It's true. We do need street cleaners, but we must also try to educate our citizens to use trash barrels. When people litter they only hurt themselves. We won't be able to save money until people learn to put their trash in the proper place.

Mayor: You are, of course, right. Without the street cleaners to sweep and flush our streets, we would look as though we were in the middle of a garbage strike.

(Garbage collector and street cleaner exit.)

Secretary: (standing) Your Honor, one of the nurses from the Public Health Department is here to address you and the Council.

(Nurse enters.)

Nurse: Your Honor, I work with a great many people to help them stay well. I visit homes where a nurse is needed, and I often hold clinics where parents and children can be examined and given shots to protect them from diseases. Some of the people I work with inspect restaurant kitchens and other places where food is prepared to make sure these places are clean and sanitary. Without the Public Health Department we would have many serious problems.

Council Member 5: (jumping up) Your Honor, we would have many problems if we did not have a good health department. We would have to worry about our children getting polio, our restaurant being unclean and the possibility of getting food poisoning, poor people would not get medical care, and many other terrible things.

(Other Council Members agree from behind.)

Mayor: All the Health Department employees will stay – that is not an area we can cut to save money.

(Nurse exits.)

Secretary: (standing) Your Honor, our next speaker is a bus driver.

(Enter Bus Driver.)

Bus Driver: I drive one of our city's buses. Every day the streetcars and buses carry thousands of people to work and to other places in the city. If everyone used a car in the city we would have a huge parking problem and our air would be more polluted than it is now. Our city needs its public transportation.

Council Member 3: We need public transportation for many reasons. We especially need it because it keeps air pollution down. Public transportation should not have any of its money taken away.

Mayor: Again you are correct. Public transportation and the people who operate the vehicles are very important to our city.

(Bus driver exits.)

Secretary: (standing) May I present a representative of our city's public schools, your Honor?

(Teacher enters.)

Teacher: Your Honor, I'd like to speak for all the teachers and other employees of our public schools including the superintendent, principal, janitors, and cafeteria workers. We help the children of this community to become useful and well informed citizens. We teach them to read and write, to enjoy art and music, play games, cook, operate machinery, and begin to understand the world we live in. You and your children need us.

Council Member 5: Education is important to all of us. I want my children to have the best. We can't do without the teachers and the people who make the school run.

(Teacher exits.)

Secretary (standing): Your Honor, a group of business people are waiting to see you. I think they are angry.

(Business people enter looking very upset.)

Shoe Dealer: Your Honor, I own a shoe store.

Butcher: Your Honor, I have a butcher shop.

Banker: Your Honor, I am a banker.

Grocer: Your Honor, I run a grocery store.

Auto Dealer: I sell cars and operate a gas station, your Honor. I have been chosen to speak for our group. We heard you are thinking of getting rid of some of our community helpers. I don't know which is the most important but I do know that we can't get along without them. We want our city to be a safe, healthy, convenient place to live in. We want our children to be healthy and happy. Our community helpers are trained for their jobs, each doing what he can do best. It is up to us to pay them to do their jobs. We need them all!

Mayor: We thank you for coming. We will think about what you have said and consider it in our decision.

(Business people leave.)

Secretary: The outer office is almost empty. Just one more group of citizens.

(Citizens enter.)

Citizen 1: Your Honor, we heard that you were thinking of getting rid of some of our community helpers. We have come to tell you how we feel about that. We need the police officers to help our children cross busy streets and to protect our lives and property.

Citizen 2: Your Honor, our house caught fire once and if the firefighters hadn't been ready at a moment's notice we would have lost our home. I wouldn't want to live in a city that didn't have a good fire department.

Citizen 3: You must keep our health and sanitation departments. We want someone always ready to help us stay well and healthy and to keep our city looking clean.

Citizen 4: Many of us would have to stay home if we couldn't ride on a bus or streetcar. Some of us wouldn't even be able to get to work.

Citizen 5: Above all, we do not want you to try to save money on the schools. Our children need good educations. **We say keep all our community helpers.**

Citizen 6: Your Honor, although we want to keep all these city departments, we also want you to stop spending money foolishly. At least in the fire, police and those other departments we can see where our money goes. You had better find good ways to cut down on our taxes or next year we will have to elect a new mayor.

(Exit Citizens.)

(Council Members huddle around table whispering.)

Council Member 1: (standing) Your Honor, we vote to keep all of our community workers. We must find some other way to save money. **(Sit)**

Mayor: (standing)	Members of our city's council, I congratulate you on your decision and I agree with you completely. We must look elsewhere to find a place to save money. We will meet next Tuesday to consider this matter further. Meeting adjourned.

Discussion follows the play on one or more of these relevant issues.

- What do you think it feels like to be a mayor? Would you have a lot of responsibility? Would some people not like you at all?
- Could a woman be mayor? What about a black person or some other minority? Why is it that most mayors and politicians are white men?
- The garbage collector tells the mayor that his or her job is one that people don't want. Why does he or she say that? Why would people not want that job?
- What are the differences and/or similarities between a mayor's job and a garbage collector's job?
    - – status
    - – salary
    - – working conditions
    - – responsibility
    - – power
    - – fame
- Why do we see some jobs as "more important" or "better" than others?
- What kind of person should you be to be a mayor? a garbage collector?
- What would make you happy about a job?
- When the city employees came to the mayor and said money could not be saved in their departments because their services were too important to the community, do you think they might have been worried about losing their jobs? What would you have done in a similar situation?
- If you were a community worker and the mayor and city council decided they would have to fire you, how would you feel? What would you do?
- Could money be saved in one of the departments mentioned in the play. Pick one and tell me how you would save money?
- The citizens said they needed all the services the city provided, but they still wanted the mayor to cut their taxes. Is that possible? Should the citizens give up something if they want to pay less taxes? Or should the mayor get a smaller salary?

Useful Prior and Subsequent Activities:

- Review new vocabulary with class.
    - hearing
    - laid off
    - taxes
    - city councilors
- Class can take field trip to city or town hall to see where community decisions are made.

Activity #16

Resources:

Films:

- Eye Gate House, Inc., 146-01 Archer Ave., Jamaica, New York 11435
  - "Community Helpers"
  - "The Sanitation Department"
- "Policemen & Policewomen," Encyclopedia Britannica Educational Films, 425 N. Michigan Avenue, Chicago, Illinois 60611

Comments From Teachers and Comments After Using the Activity:

OCCUPATIONAL FOCUS:

- Careers in Transportation
  - Truck Driver
  - Taxi Driver
  - Baggage Clerk
  - Ship Captain
  - Flight Attendant
  - Personnel Officer
  - Pilot
  - Train Conductor
  - Ship Officer

LANGUAGE ARTS RELEVANCE:

- Writing
  - Letter Writing
  - Paragraph Formation
- Speaking
- Questioning

Activity #17

Subject Area:

Language Arts

HIRING FOR JOBS IN MOTION

Capsule Activity Description:

Students choose a transportation mode, research career opportunities in that mode, and simulate a company personnel department "hiring" applicants to work in that business.

Teaching Prerequisites:

materials needed: construction paper, crayons, help wanted sections of newspapers
contacts with community: none
approximate preparation time: 1-1½ hours
approximate class time: 2-3 classes

Language Arts Objective:

to develop writing skills, with special focus on letter writing skills and paragraph formation.

ACTIVITY

This activity is designed to enable students to explore a wide variety of jobs in the field of transportation and at the same time provide familiarity with the occupation of a company personnel officer.

You can integrate the activity into your language arts class whenever you plan to focus on letter writing skills. The activity is also useful for reinforcing verbal communication skills, since the role plays require "personnel officers" to ask appropriate and clear questions and force "job applicants" to respond sensitively to these inquiries.

Divide the class into small groups. Each group simulates the personnel department of a new company in the transportation industry. To give the groups identity, ask them to choose a particular mode of transportation (airplane, train, boat, bus, taxi) and name their company accordingly, for example, Fred and Stella's Bus Company, Easy Rider Train Co.

Activity #17

Because these are "new" companies, they need to hire new employees. They must advertise to secure them. So that students can learn about the types of jobs and staff their "company" needs, they write a letter as a group to the personnel department of a company which provides the mode of transportation each group has selected to simulate. You and they can identify appropriate local transportation companies to write by referring to the Yellow Pages of the telephone book. Major companies to which students can write include:

American Airlines, Inc.
Personnel Department
633 Third Avenue
New York, New York 10017

Amtrak
Public Affairs Office
955 L'Enfant Plaza, N.
Washington, D.C.

Greyhound Bus Lines
Greyhound Tower
Phoenix, Arizona 85013

Cunnard Line Ltd.
Personnel Department
555 5th Avenue
New York, New York 10017

Provide students with the following guidelines for writing their letters:

1. Tell the person you are writing (a) who you are, (b) your grade, (c) school, (d) what you are studying, and (e) why you would like this information on the types of jobs the company offers. Include this information in the first paragraph of your letter.
2. In a second paragraph, explain that you need the following specific information on the types of jobs available in the company:

    (a) description of the work people holding that job do;
    (b) list of skills and information they need to do their jobs;
    (c) salary levels; and
    (d) working conditions.

3. Request any posters or brochures the company uses for advertising. Make this request the third paragraph of your letter.

You can help the groups to write their letters and then have each group present its letter to the class for improvements. A sample letter to an airline follows.

American Airlines, Inc.
Personnel Department
633 Third Avenue
New York, New York 10017

Dear Sir or Madam:

We are students in the fourth grade at the Johnson School in Weston, New York. We are setting up a classroom personnel department in our study of careers in the transportation industry, and we need information about them.

Please send us information on careers as a pilot, navigator, and flight attendant. We would like to know what these people do in their work, what kind of background and training they need for the job, salary ranges and working conditions in your company.

If you have any posters and brochures about your company that you could send us with which to decorate our personnel office, we would appreciate it very much.

Sincerely,

Mary Beth Ladd
Tim Stein
Jill Ferraro
Jonathan French

Johnson School
429 Pleasant Street
Weston, New York 32154

It will probably take some time for students to receive the materials. When they do arrive, the groups can begin to set up their personnel departments. Work can include designing and making posters and writing pamphlets and handouts to advertise the jobs that are available in the new companies.

- Posters should be large and visible. Students should make them as attractive and simple as possible so people will want to stop by and inquire about the available jobs.
- Handouts can resemble help wanted ads. Bring in several helpwanted sections of the newspaper after which your students can base the design of their handouts. Tell your students they must say as much as they can about the job in as few words as possible.
- Pamphlets should say more than handouts and be as attractive and eye-catching as the posters. Here students can use both illustrations and short paragraphs to describe the job and the company.

When the materials have been made, the job of the company personnel department can begin. Request each department to give a short "talk" on their job openings as if they were trying to sell their jobs and company to the new employees.

Activity #17

Once the introductory talks have been presented, the indivdiual personnel departments can start their interview sessions. Three sample role plays follow which students can use. Students can also develop and role play job interview situations of their own.

Role Play A – Train

Applicant: You need a job. You're really broke – your luck has run out. You don't want to work very hard and you sure hate getting dirty. Is there a job for you with the train company?

Role Play B – Airplane

Personnel Department: So, he thinks he wants to be a flight attendant? He's a little short and at least seven pounds overweight. You really wish you didn't have to hire male flight attendants. You like women stewardesses much better.

Role Play C – Ship

Applicant: You're a good worker –– you really like to work. You've worked on loading docks before –– you're strong and healthy. You know you could do well here. How much does this job pay anyway?

After the role plays, conduct a follow-up discussion dealing with one or more of the following issues.

1. Why were three paragraphs necessary in the letters you wrote? Could you have provided the same information and make the same requests in two or four paragraphs?
2. How should you begin a letter to a stranger? How should you end a letter in which you have asked a favor of someone?
3. How should you address and sign a letter to a stranger?
4. In your role plays, were there any examples of discrimination? Did any of the "personnel officers" refuse to hire someone because of his or her sex? Should a man or woman be considered equally for all of the jobs you researched?
5. What are the skills needed in the jobs you researched?
6. What are some of the things people do in these jobs that seem exciting or interesting, like flying a plane or driving a truck? What are some of the less attractive aspects of these jobs? For example, does driving a truck get boring? Can driving a taxi be "nerve wracking"?
7. What skills are needed to perform well in the jobs you researched?
8. What do people do in the jobs you researched **besides** operate a vehicle?
9. What is it like to be a personnel officer? How does it feel to interview people? What questions should a personnel officer ask a job applicant? How can he or she tell if an applicant will be a good worker?

Useful Prior and Subsequent Activities:

- Students can take a field trip to one or more transportation companies or interview a local taxi cab driver, truck driver, or personnel officer.

- Students can invite one or more transportation employees to class to explain their jobs and answer questions from the class.
- Students can invite students from other classes to choose one transportation occupation from among the jobs the students' "companies" have to offer.

Resources:

Books:

- *I Want to Be a Taxi Driver,* Eugene Baker
- *I Want to be a Bus Driver,* Carla Greene, Children's Press, 1224 West Van Buren St., Chicago, Illinois 60607
- *At the Airport,* Lillian Colonius and G.W. Schroeder, Melmont Publishers Inc., 1224 West Van Buren St., Chicago, Illinois 60607.
- *What Does a Jet Pilot Do?,* Robert Wells, Dodd, 1959.
- *Come to Work With Us at the Airport,* Jean Wilkinson
- *I Want to Be a Train Engineer,* Carla Greene, Children's Press, 1224 West Van Buren St., Chicago, Illinois 60607.

Films:

- "Airport-–Passenger Flight 376," 17 min., Academy Films
- "Jetliner Captain," Fass-Levy Films, Denver
- "Transportation by Air," Young American Films, McGraw-Hill, Text-Film Department, 330 West 42nd St., New York, New York 10036.
- "Travel," Scott Education Division, Holyoke, Massachusetts.

Comments From Teachers and Students After Using the Activity:

OCCUPATIONAL FOCUS:

- General Career Awareness

LANGUAGE ARTS RELEVANCE:

- Questioning
- Notetaking
- Listening
- Speaking

Activity #18

Subject Area:

Language Arts

"WHAT'S MY LINE"

Capsule Activity Description:

Students research occupations and play the game "What's My Line?"

Teaching Prerequisites:

materials needed: large cards (6" x 6") numbered 0,5,10,15 . . . 50, copies of questionnaires
contacts with community: interviews with parents or other available people
approximate preparation time: 1 hour
approximate class time: 1½-2 classes

Language Arts Objectives:

to develop questioning and notetaking skills and to improve speaking and listening skills.

ACTIVITY

This activity should prove to be fun for your students as well as profitable. The game is an easy one for students to learn and a large number will already be familiar with it because of its success on television. The activity offers an opportunity both to improve language arts skills and to broaden the occupational awareness base.

The activity incorporates the three major language skills: listening, speaking, writing. Thus, it can be integrated into your curriculum at any time. More specifically, it can be used whenever you take up the skills of questioning and notetaking, since the activity requires students to develop a questionnaire and take notes. These notes will be used in a listening/speaking exercise which can serve as a place to review these important skills.

Activity #18

The class plays "What's My Line?", a game where a panel of four students tries to guess, by asking questions, a "contestant's" occupation.

Students interview a parent, relative, or neighbor about their job using a questionnaire devised by the class. In this regard the activity requires a certain amount of sensitivity to students' and parents' feelings about their jobs, family life, and lack of work or family life. For example, students whose parents are unemployed or deceased may be embarrassed and confused by the activity if you routinely assume every student has an employed parent. One way to avoid such problems is to make it clear from the beginning that students do not have to interview an employed parent, but can also interview an employed relative or neighbor or interview a parent who may not be currently employed but who has held one or more jobs in the past. You may also be able to enlist the assistance of your co-workers for this activity. Students can interview the school secretary, janitor, principal, cafeteria worker or even another teacher. Often teachers hold other jobs in the summer or have worked at other professions in the past. Remind your students that the occupations they are studying are to be kept secret to make the game more fun.

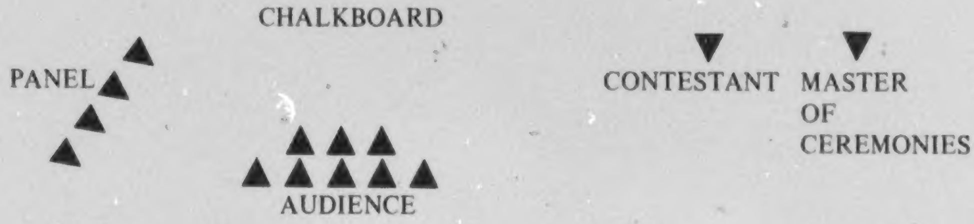
Discuss with the class the difference between gathering information in an interview and the questioning process used by the panel in the game. An instrument is developed in both cases to meet the specific needs and requirements of the particular questioning process (see samples).

Allow the students to refer to their questionnaires throughout the game.

Keep a list of students and the people and occupations they are interviewing. Prior to the game you may wish to list the occupations on the chalkboard and briefly discuss each one with the class. This will allow everyone to have an equal advantage, as many of these occupations may not be familiar to the students. Leave the list on the chalkboard so it may be referred to throughout the game.

When the interviews are completed and the class is prepared, you are ready to run the game.

The room can be set up as it is on the television show (see below).



Panel members are selected on a rotating basis, four at a time, until all children have had a chance to participate as a panel member. Each panel is given the opportunity to guess the occupations of several contestants one at a time. For example, if the class size is 24, each panel of four will sit on four contestants. This also eliminates the confusion that would result if the panel were to be changed after each contestant. You may wish to act as Master of Ceremonies.

The procedure for the game is as follows:

- Contestant "enters" and "signs in" (writes his or her name on the chalkboard), sits down next to the Master of Ceremonies, and whispers his or her occupation in the "MC's" ear. The MC gives the panel a clue to the occupation. [For example: Mr. Smith works outdoors (a farmer). Ms. Cortex helps people (a police officer).]

- One at a time, the panel begins to question the contestant. The contestant is only allowed to answer "yes" or "no," "sometimes" or "maybe" to the questions. A panelist continues to question the contestant until a "no" answer is given. With each "no" answer the contestant gets 5 points (the numbered cards may be used to keep track of the points).
- A substantial number of questions must be asked by the panel members to gain information on the occupation before a guess is made.
- If the contestant makes 50 points (10 questions having "no" answers) before the panel guesses the occupation, he or she is the winner. If the panel guesses the occupation before asking 10 "no" questions then the panel is the winner.

As Master of Ceremonies you may have to assist the panel and contestants in the question and answer process.

After the game discuss the following with the class.

- What did you learn about the questioning process?
- Did your notes help you to remember things about the job that you might have forgotten otherwise?
- Why do people have jobs?
- Do most people like the work they do? (Think about the person you interviewed before answering this.)
- Is it important to like your work?

Option: One or more contestants put on costumes representative of their occupations. Panel members are blindfolded for these contestants.

Useful Prior and Subsequent Activities:

Prior:
- To prepare for this activity students can role play an interview and run through a series of questions for the benefit of the panel members.

Subsequent:
- The activity can be used to review careers previously studied. Memory or research replaces the interviews in this instance.

Resources: Parents and other willing workers are the best resources for this activity.

Books:
- *What Could I Be*? Science Research Associates, Inc., 259 East Erie Street, Chicago, Illinois 60611.
- *Come Work With Us Series,* Children's Press, 1224 West Van Buren St., Chicago, Illinois 60607.
- *Occupational Information,* R. Hoppock, McGraw-Hill, 330 West 42nd St., New York, New York 10036.
- *Encyclopedia of Careers and Vocational Guidance,* Vol. I & II, William E. Hopke, Doubleday, Garden City, New York 11530.

Activity #18

Comments From Teachers and Students After Using the Activity:

SAMPLE INTERVIEW QUESTIONNAIRE

NAME: ______________________________

OCCUPATION AND/OR TITLE: ______________________________

1. Describe your job duties: ______________________________

____

2. a. Do you work in or outdoors? ____________

   b. Is your work physical or mental? ____________

   Describe: ______________________________

   c. What hours do you work? ____________

   d. Do you work during the day or night? ____________

3. Do you have to wear any special clothing for your job? ____________

   If so, what and why? ______________________________

4. Do you work with people? ________

   How? ______________________________

5. Did your job require any special training or education? ____________

   Describe: ______________________________

   ____

6. Do you like the work you do? ______________________________

   ____

7. Why did you choose this field? ______________________________

   ____

8. Do you think I might like and/or be good at a job like yours when I grow up? ____________

   ____

   ____

9. Is there anything else I should know about this job? ______________________________

   ____

   ____

Activity #18

SAMPLE QUESTIONS FOR PANEL USE

1. Do you work indoors?
2. Do you work outdoors?
3. Do you make something?
4. Do you work with your hands?
5. Do you help people?
6. Do people come to you for help?
7. Do you work with other people on the job?
8. Do you fix things?
9. Did your job require you to go to school beyond high school?
10. Do you work during the day?
11. Do you work during the night?
12. Do you wear a uniform?
13. Do you handle money in your job?
14. Does your job require more physical energy than mental energy?

OCCUPATIONAL FOCUS:

- Librarian
- Cataloguer
- Stacker

LANGUAGE ARTS RELEVANCE:

- Alphabetizing
- Classification
- Library Skills
- Reading
- Writing
- Summarization

Activity #19

Subject Area:

Language Arts

BORROW A BOOK

Capsule Activity Description:

The class learns about library procedures and applies them by setting up and maintaining a classroom library.

Teaching Prerequisites:

materials: gum labels, 3" x 5" cards, notebook
contacts with community: visit to school or local library
approximate preparation time: 1-2 hours
approximate class time: 2½-3 classes plus free class time.

Language Arts Objectives:

to develop library skills;
to give practice in sentence writing and summarization;
to reinforce alphabetizing skills.

ACTIVITY

The main focus of this activity is on student participation in a classroom library. A visit is made to the school or local library where students observe and learn about library procedure and the duties of various library personnel. This knowledge is then put to use in the classroom.

The activity can easily be integrated into your language arts curriculum.

- The most obvious place to include this activity is in a unit on developing library skills. Not only do the students learn how to use the library, they discover how it is set up and how it is maintained.

Activity #19

- When working on alphabetizing and classification skills, you will find the activity helps students understand the need for and use of these skills in everyday life.

Libraries usually welcome school groups to their facility and are happy to show you and your students how to use their services. Contact the librarian in charge of the facility you wish to visit to make the necessary plans for the trip. If you are unsure whom to call, speak to your principal for assistance in making the arrangements. (For additional information of field trips, see the "Liaison" section in the "Resources" section at the end of the manual.)

Along with learning how to use the library, request your students be allowed to observe the work that goes on to maintain it. Depending on the size of the library you are visiting, one person may handle all the tasks needed to run the facility (with the help of volunteer workers), or there may be a large number of people responsible for the various tasks and operations.

Before leaving the library your students perform a small task to acquaint them with the various library systems.

- Obtain as many 3" x 5" cards as you have students.
- On each one print the title of a book you think the students will enjoy (if possible, a different book for each child).
- Pass out the cards to the students.
- Students look up the book that appears on their card in the card file or catalog.
- Once they have located the appropriate card in the file, they copy what appears there onto their 3" x 5" card.
- Upon completing that task, they find the book in the stacks.
- If the book appeals to them and they have a borrowers card, they take it home to read.

Back in the classroom discuss the visit with your students in light of some of the following issues:

- How do you think the jobs of a school librarian and a community librarian might differ?
- Would you have to like people to do this job?
- Do you think more men or women become librarians? Why?
- Why do libraries have systems for organizing books, etc.? What would it be like if there were no systems?
- Why do we need libraries? Why do we need books?

Now begin work on your classroom library.

- Gather together all the classroom books (except those texts in use). If you do not have many classroom books, use books students have borrowed from the library and/or stories and sections from texts.
- Assign four or five students to separate the books into: fiction, non-fiction, resource, text.
- Assign another group of students the task of alphabetizing each section.
- Discuss with your students a cataloging system, and together design one to suit their ability and needs.

Activity #19

Fiction:

A-F 1, A-F 2, A-F 3 . . .
B-F 1, B-F 2, B-F 3 . . .
C-F 1, C-F 2, C-F 3 . . .

A,B,C, etc. = first letter of author's last name.
F = Fiction

Non-Fiction:

A-NF 1, A-NF 2, A-NF 3
B-NF 1, B-NF 2, B-NF 3
C-NF 1, C-NF 2, C-NF 3

A,B,C, etc. = first letter of author's last name.
NF = Non-Fiction

and so forth.

- Give students index cards, gum labels, and several books to catalog. The catalog number is written on the gum label which is put on the spine of the book.

Sample Catalog Card:

Book Catalog#

Author
Title

(Short description if one available)

- If a student has read a classroom book, he or she writes a short, 1-3 sentence description of it on the catalog card.

Sample:

S-F 1

Mary Steward
The Little Broomstick

Mary Smith lives in England. While spending a month with her aunt, she and her new friend Tib, the cat, come upon a magical broom which flies them off on an exciting adventure.

Activity #19

- As students read books, short stories, magazine articles, etc., they fill out catalog cards and add them to the class card catalog, indicating where the book (or whatever) can be found if it does not belong to the class library. Recipes, comic books, class reports are items that can also be included in a card catalog and added to a classroom library.
- Once the library is operational, the positions of librarian and stacker (rotating on a daily or weekly basis) are established, both to keep the library functional and to give students an opportunity to experience these professions.
- Make up a notebook for the librarian so he or she can keep a record of books that are borrowed.

Sample Notebook Page:

Today's Date	Due Date	Date Returned	Borrower's Name	Book Title	Catalog Nos.

Useful Prior and Subsequent Activities: As students come across books, stories, etc. they like and/or dislike, they can write book reviews to be posted in the library to aid other readers in making selections.

Resources:

American Library Association
50 East Huron Street
Chicago, Illinois 60611

Filmstrip:

- Community Workers and Helpers, Part I, "Library Workers,"
  Society for Visual Education, Inc., 1345 Diversey Parkway,
  Chicago, Illinois 60614

Comments From Teachers and Students After Using This Activity:

OCCUPATIONAL FOCUS:

- Service Trades
  - Barber
  - Beautician
  - Auto Mechanic
  - Television Repairperson
  - Restaurant Owner
  - Funeral Director

LANGUAGE ARTS RELEVANCE:

- Speaking
- Questioning Process
- Notetaking

Activity #20

Subject Area:

Language Arts

TO SERVE YOU BETTER

Capsule Activity Description:

Students survey parents and neighbors to discover need and use for people in service trades.

Teaching Prerequisites:

materials: copies of surveys (sample attached), large sheets of poster paper, magic markers
contacts with community: student contact with parents
approximate preparation time: 1-2 hours
approximate class time: 1½-2½ classes

Language Arts Objectives:

to develop interviewing/questioning techniques and skills needed to recognize and record important information accurately;
to develop the ability to transfer knowledge to real life situations and to express oneself clearly.

ACTIVITY

This activity deals with various occupations in the service trades. People who are employed in these trades provide necessary services to the members of a community. In the exercises that follow, students learn about these various careers from the perspective of the consumer. The activity thereby enables students to discover, first hand, not only what people do for a living and what services the community provides, but also to become aware of the way in which various occupations are perceived by the people who deal with them. The activity accomplishes these objectives by asking students to carry out several interviews with consumers to learn about workers in the service trades.

Activity #20

The activity may be integrated into the language arts curriculum when teaching or reviewing questioning techniques and notetaking skills. Practice is provided in both areas, and students are required to compile and interpret the information gathered in the survey questionnaires.

A sample questionnaire has been included at the end of the activity. You can give it to your students as their survey instrument or you can draw up one of your own in class. If you select the latter option, divide the class into small groups for the purpose of brainstorming a questionnaire. If you select this method, give students the following instructions.

- You want to find out as much as you can about a job.
- Unfortunately the person who fills that job is not available today.
- You decide the next best thing to talking to the person who does the job is talking to a person who benefits from that job and/or uses its services in some way.
- You can't ask too many questions because the interviewee (as the person answering the questions is called) will get tired and not wish to answer anymore. At the same time, however, you have to get as much information about the occupation (duties, salary, working conditions, etc.) as you can.
- Think of as many good questions as you can to ask these people and we will use the best ones in our survey.

Groups brainstorm for approximately 10 minutes. One student acts as chairperson to direct the group if they get bogged down, another acts as scribe to record the questions. Once the brainstorming is done, the questions are put on the chalkboard as they are read aloud by the group scribes. The best ones, as determined by the class, are used in the survey.

Once the survey has been developed, drawn up, and distributed to the class, (three copies per pupil) each student chooses one occupation to research from a list on the chalkboard (e.g., barber, beautician, auto mechanic, television repairperson, restaurant owner, funeral director, etc.). Make sure you have a close to even distribution of occupations. Students take their surveys home and interview three people (i.e., parents, neighbors, relatives) concerning the one occupation they chose. Allow students a sufficient amount of time to complete their surveys.

As the surveys are completed, students record responses on giant retrieval charts supplied for each occupation. These charts are hung around the room, low enough for students to write on them. The retrieval charts might be similar to the attached sample, allowing room for students to fill in their remarks. Keep a magic marker next to each chart to facilitate completion. Only new information is added to the charts, check marks are used to indicate repeated responses. For additional information on constructing and administering polls, see the sections on "Polls" and "Interviews" in the chapter "Effective Teaching Methods for Career Education" at the end of the manual.

When the surveys have been completed and retrieval charts filled in, students regroup, according to occupation, to make a presentation on their findings. The presentations are in the form of another interview. This time the interviewee is the worker played by a student. These presentations can be a simple one-on-one interview or a skit utilizing all members of the group. By means of these role played interviews groups present as much information as possible about their worker to the class.

After each presentation the class discusses the following issues:

- Do you think the presentation was realistic and the information valid? Why? Why not?
- How could we check to see if our information is correct?

- What does our information tell us (be it right or wrong)?
- When we think of a beautician or funeral director does a special kind of person come to mind? For example, do we assume there's something "weird" about anyone who runs a funeral home?
- Why are so many of these occupations filled by men?
- "All your life you've wanted to be an automobile mechanic. Your friends are all going to college, your father is a lawyer, your mother is a chemist – how do you tell everybody you have been offered a job at Larry's garage. Maybe you should go to college too?" Why do some people react negatively to some jobs and positively to others?
- After learning about these different kinds of jobs, are there any skills or personality traits these people have in common?
- Why do people become barbers/beauticians/auto mechanics/television repair people/restaurant owners/funeral directors? Do you think you would want to do work like this?

Useful Prior and Subsequent Activities:

- Students write letters to parents requesting their assistance for this activity.
- The class can take a field trip to visit one or more of the businesses dealt with in the activity.
- Guest speakers (parents) can be invited to class to speak to the students on their first hand experience in a service job.
- Class does follow-up research to check out their survey findings.

Resources: The best resources for this activity are willing parents and community workers.

Kits:

- "People Who Help Others" Kit (Filmstrips and Records) by Guidance Assoc., Pleasantville, New York 10570
- Desk Top Activity Kit (K-6), "Community Helpers at Work" Demco Educational Corp., Box 1488, Madison, Wisconsin 53201

Filmstrips:

- "The Service Station Attendant," McGraw-Hill, 330 West 42nd St., New York, New York 10036
- Budek Films, P.O. Box 307, Santa Barbara California, 93102, Employment Opportunity Series
  - "Working in a Laundry and Dry Cleaning Plant"
  - "Working With Cars"
  - "Working With People"
- "At Your Service," Educraft Inc., 6475 Dubois, Detroit, Michigan 48211

Film:

- "Cosmetologists," Hairdressers and Cosmetologists Association, 175 Fifth Avenue, New York, New York 10010

Comments From Teachers and Students After Using the Activity:

Activity #20

SAMPLE QUESTIONNAIRE

Name of Person Interviewed: ______________________________

Occupation (circle one)

Barber, Beautician, Auto Mechanic, Television Repairperson, Restaurant Owner, Funeral Director

1. Do you ever use the services this occupation provides? ______
   If yes, how often?______ times per week
   ______ times per month
   ______ times per year

2. What does this person do for you? Be specific.
   (brief description of duties)

3. How does this person treat you in ways that you like and don't like?
   (rudely? politely? quickly? slowly?, etc.)

4. Do your friends use these services? ______
   all my friends do ______
   some of my friends do ______
   none of my friends do ______

5. Do you know if this person needed training for this job?
   How much training? __________
   What kind of training? ______________________________

6. About how much money do you think this person makes? __________

7. Do you think this job would ever be boring? ______ Why?

8. If you had a job like this one, would you change it in any way to make it better? If yes, how would you change it?

9. Do you think you would like a job in this field? Why or why not?

SAMPLE RETRIEVAL CHART

Service Occupation: Barber

	YES	NO	COMMENTS
1. Do you use the services this occupation provides?			
2. Do your friends use the services of this person?			
3. Did this job require training?			
4. Salary	——	——	
5. What are this person's duties in this job?	——	——	

Section Three: MATHEMATICS

I. ACTIVITIES SUMMARY

This section of the manual contains the following ten activities, sequenced very generally from easiest to most difficult.

21. ***MA BELLE:** Class plays game, similar to Bingo, using telephone numbers.
22. **EARTH MOVERS:** Students observe large equipment operators at a construction site and explore the skills involved in operating this type of equipment.
23. **OCCUPATIONAL SETS:** Students play a game with occupational flash cards, drawing sets of tools/objects associated with a particular occupation.
24. **OH FUDGE!:** Students visit a bakery or commercial kitchen and hold a class bake sale.
25. **BANK IT:** Class learns about banking procedures, sets up its own bank and operates it.
26. **TRAVEL, TIME AND MONEY:** Acting as travel agents, students arrange trips via different modes of passenger transportation.
27. **HEALTH MEASURES:** Students learn about various health professions by visiting the school nurse and maintaining their own health records.
28. **SOLVING JOB PROBLEMS:** Students are given budgeting problems to solve and defend.
29. **WINNING AT MATH:** Students play a team game answering mathematics questions relevant to various occupations.
30. **MATH ON THE JOB:** Students survey parents and neighbors and make observations on the use of math in occupations in their community.

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*The activities in this section of the manual begin with number 21 because the numbering continues sequentially after the last activity (number 20) of the previous section on Language Arts activities.

2. INTRODUCTION

As an elementary level mathematics teacher, you should consider career education as an integral and appropriate component of your teaching which will **increase your students' ability and motivation to learn mathematics skills.** Moreover, as a mathematics teacher, you are in a good position to integrate career education activities into your courses because you teach a variety of skills which are integral or peripheral but essential components of many occupations, from sales clerk to engineer. Because of the variety of mathematics skills you teach, you will have no difficulty identifying appropriate points of entrance in your course for introducing career education activities which **will complement and further your mathematics objectives.**

How will the integration of career education activities into your mathematics curriculum help you achieve your subject area objectives? There are at least two answers to this critical question.

1. Many of the **skills** in mathematics curricula will be developed or reinforced through the use of career education activities, including such mathematics skills as addition, subtraction, multiplication, division, scale drawing, working with fractions, measurement, and work problems. Career education activities can help students comprehend the theoretical aspects of mathematics by seeing or engaging in the **practice** of mathematics. For example, if students take a field trip to a bakery or restaurant to observe how workers make use of mathematics on the job, and apply these observed skills in a similar manner, then students will be developing their basic mathematics skills in a realistic context as well as learning the concepts of measurement.

2. By including career education activities in your curriculum, you will increase your students' **motivation** to study and develop mathematics skills. By studying careers related to math in exciting action-oriented ways, students will be stimulated to delve more deeply into mathematics problems related to the careers or occupations they are studying. For example, students who study banking as a career by interviewing various bank personnel and simulating some of their tasks will probably want to increase their working knowledge of basic mathematics skills and develop new ones such as working with decimals and percent. In this manner career topics have the attractiveness of **"relevance"** for studying and learning mathematics skills. Activities dealing with concrete, current occupations of personal concern to your students can add motivation to the disaffected, as well as involved student who wants to know what mathematics has to do with the world of an adult. By including career education activities in mathematics, you bring the world outside your classroom inside. School, and mathematics in particular, becomes more in tune with the world and better able to prepare the student for it.

How can integration of career education with mathematics operate in practice? Lets' look briefly at a hypothetical Sample Week's Lesson Plan to see how math teachers can integrate career education activities in their curricula.

3. SAMPLE WEEK'S LESSON PLANS

The example of a week's lesson plans on the following page are "being used" in an elementary mathematics unit to study liquid measure. The lesson plans can be used either as an introduction to the concept of liquid measure or as a review of previously learned skills. Homework assignments in the lesson plans refer to work assigned that night and due the next class.

The first class period is devoted to introducing (or reviewing) the subject matter, demonstrating what is a measure and how it is used, and allowing the students to explore measurement using the appropriate utensils. At this point you have chosen to integrate a career education activity on developing awareness of careers that encompass cooking skills (Activity #24) into your lesson plans. By visiting a bakery, making fudge, and running a bake sale, you have met this **career education objective.** The activity also reinforces the concept of measurement by providing a practical application of the skill, a **mathematics objective.**

You may wish or need to revise this and other career education activities to meet the needs of your class and to more appropriately fit with your mathematics plans. For example, you may not be able to spare the time or be able to visit a bakery. The next best thing would be to invite a homemaker (preferably a parent) to class to explain how he or she uses measurement and why it is important to his or her work. This would result in spending only 20-30 minutes on this portion of the activity rather than a period or more. The activity can also be used in a unit on metric measures to give practice in using and applying the metric system.

SAMPLE WEEK'S LESSON PLANS

(An illustration of one way to integrate a career education activity into your course.)

HOMEWORK ASSIGNMENT	DESCRIPTION OF CLASS ACTIVITY	
Students complete exercises on measurement in mathematics textbook.	• Class is introduced to liquid measures (ounces, cups, pints, quarts, half gallons, gallons) through demonstrations, by the students themselves, using common kitchen measuring cups and water or sand. • Class discusses who uses liquid measures.	DAY 1
Students get permission from parents to bake at home.	• Class takes a field trip to a bakery or restaurant kitchen to observe the workers and their use of measurement. (Activity #24) • Class discusses the trip and the use of mathematics by the people observed at the bakery. Inform students of class bake sale. Discuss what will be sold.	DAY 2
Students bake for sale.	• The class briefly reviews standard liquid measures. Use measurement flash card/equivalence game. • Students make up shopping list. • Class calculates cost of fudge and what to charge per piece. • Bake sale items and contributors listed on blackboard. Class determines prices to be charged for these items. • Remind contributors of bake sale.	DAY 3
Students bake for sale.	• In groups, the students make fudge--first one half of the class, then the other. • The half not making fudge decorates and prepares for bake sale.	DAY 4
	• The students who baked something at home tell the class how they made their items and what kinds of measures they used. • Class completes preparation for sale. (Bake sale at lunch recess)	DAY 5

4. CROSS REFERENCE

The cross reference below identifies by number activities which treat particular occupational issues and jobs (listed across the top of the page) and activities which reinforce specific mathematics topics and skills (listed down the left-hand margin of the page). By using the reference, you can locate activities by specific jobs or occupational issues which you may want to teach or by particular mathematics topics and skills which you feel are relevant points in your curriculum at which to introduce a study of careers.

CROSS REFERENCE

OCCUPATIONAL FOCUS / TOPIC OR SKILL	Baker	Banking	Chef	Construction	Controller	Dietician	Doctor	General Career Awareness	Homemaker	Nurse	Political & Appointive Office	Pollster	Researcher	Telephone Company	Transportation Representative	Travel Agent			
Addition	24	25	24		28			29 30	24 28		28	30			26	26			
Averaging						27	27			27			27						
Cardinal Number														21					
Charts						27	27			27			27						
Decimals		25																	
Distance															26	26			
Division	24		24					29 30	24			30							
Estimation	24		24	22					24										
Fractions	24		24					29	24										
Logic															26	26			
Measurement	24		24			27	27		24	27			27						
Metric System	24		24			27	27		24	27			27						
Money	24	25	24					29	24						26	26			
Multiplication	24		24		28			29 30	24 28		28	30			26	26			
Percent		25																	
Sets								23											
Sequences														21					
Subtraction	24	25	24		28			29 30	24 28		28	30			26	26			
Time				22				29							26	26			
Record Keeping		25		22		27	27			27			27						
Word Problems					28			29	28		28								

OCCUPATIONAL FOCUS:

- Careers in the Telephone Company
  - Operator
  - Service Representative
  - Directory Assistance Operator
  - Billing Clerk

MATHEMATICS RELEVANCE:

- Cardinal Numbers
- Sequences

Activity #21

Subject Area:

Mathematics

MA BELLE

***Capsule Activity Description:**

Class plays game, similar to Bingo, using telephone numbers.

Teaching Prerequisites:

materials: paper, pencils, small chips or pebbles (25 per student), local telephone book
contacts with community: visit to local telephone office
approximate preparation time: 1-2 hours
approximate class time: 2-2½ classes

Mathematics Objectives:

to reinforce the concepts of cardinal numbers and sequences;
to develop an awareness of the ways in which numbers are used in real life.

ACTIVITY

This activity gives students practice in using sequences of cardinal numbers. Played like Bingo, students write, recognize and read various number sequences as if they are telephone operators. The activity can be integrated into your mathematics curriculum to strengthen skills associated with cardinal numbers. It also introduces students to several occupations that require a working knowledge of basic mathematics skills.

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*This activity has been revised from an activity developed by Dr. Marla Peterson, et al. We are grateful for permission to use it. The original activity is part of *Coping Behaviors, Dimension Guide, K-6 Career* Education, U.S. Office of Education, Department of Health, Education and Welfare (Washington, D.C.: 1974).

Activity #21

This game is called "Buzz." It is used here in conjunction with a trip to the telephone company, but it can easily stand alone as a practice of review exercise. Buzz can be introduced to the class in the following manner.

Machines complete telephone calls that we dial without operator assistance. Operators are usually used only for special calls. When special operators take a call they must be able to recognize a sequence of from four to seven numbers that make up a "telephone number." (The length of the numbers used to play "Buzz" depends on your students' ability and their familiarity with cardinal numbers.)

With the class review the way in which to locate the telephone numbers of the police and fire departments in the local telephone book. Instruct students in the proper way to read a telephone number if they do not already know. Three, nine, two, seven, eight, one, eight (392-7818) is the way a number is stated and read. As homework students learn their home telephone numbers, if they have one. After writing the number on a piece of paper, students look up the numbers of the local police and fire departments in the telephone book and list them under their home number.

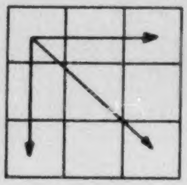
As a class, make up your own telephone book including each student's telephone number and the local numbers to call for emergency. Students write their own numbers on the chalkboard and read them aloud.

Next, give each student a piece of paper that can be folded or marked into 25 blocks, or 9 blocks if time does not permit the use of such a large board.

1- 8973	5- 1921	
7- 9248	O	
	3- 0124	

An "O" is put in the middle block for Operator. Students write in the blocks in random order the numbers that appear in the class telephone book. If there are not enough numbers in the "book" to fill the blocks, use telephone numbers of the school and well-known business firms in the area.

Slips of paper listing each number are put in a box or some other receptacle for the "caller." As the numbers are called, the slips of paper are set aside. Keep a list of all numbers used in the game and check them off as called. Each player has chips or pebbles to cover a number it is called and appears on the game board. The game proceeds as in Bingo. Once a student has covered a row of numbers running vertically, horizontally or diagonally, he or she yells "Buzz."



Numbers are read aloud to check for a "wrong number."

As a follow-up to "Buzz" arrange for a field trip to the local telephone office so students can observe telephone personnel working with numbers. To make your arrangements contact the telephone company directly, or if a parent is employed there, request his or her assistance with your plans. Various school personnel may also be able to help you in this regard. (For additional information on field trips, see the chapter on "Liaison" in the "Resources" section at the back of the manual.) Focus your visit on workers who use numbers and mathematics skills – telephone operators, service representatives, directory assistance workers, billing clerks. Observe them at work, request an explanation of what they do and how mathematics fits into their day. If possible the explanation should come from the workers themselves and students should be allowed to respond and ask questions. Time permitting, other workers and operations at the telephone company are observed.

After the trip discuss some or all of the following issues:

- How many people did you notice using numbers or mathematics in their work? Can you name any of them?
- Do you think it is important for telephone workers to be careful when they do their work? What would happen if operators kept getting wrong numbers? billing clerks kept adding incorrectly? telephone installers kept putting wrong phone numbers on new telephones?
- On the field trip you may have noticed that in one type of job most of the workers were women and in another type of job they were mostly men. Why is this so? Why don't both men and women do the same jobs?
- Many workers at the telephone company must talk to people all day. Some customers are nice; some are not so nice. How must one act toward all these people? Why?

To further an understanding of various jobs in the telephone company, students role play several occupational situations. Sample role profiles follow.

A.

Caller: That's the third wrong number you've dialed. You **know** you have been dialing the right number. This is an important call and you're really getting mad. You're not going to let the telephone company get away with this. You think you'll call them right now!

Representative: For your first day on the job things are going quite nicely. The telephone company really does train its employees well – everything you learned has come in handy and you've been as cool as a cucumber all day. This job is going to be a snap.

B.

Child: Your mother has just gone to the store to get some milk for the baby. You're 9 now, so it's okay for you to stay alone and watch your brother. Oh no, why is the baby coughing — he looks so sick. What should you do? Maybe you should call somebody.

Operator: It's almost time to go to lunch. You're meeting Fran downtown so you've got to leave right away. The last time you were to meet her you were 15 minutes late. That's not going to happen this time.

Activity #21

Useful Prior and Subsequent Activities

- Students can learn how area codes correspond to the population of an area.
- Students can learn proper use of the telephone.
- Students can compute various long distance rates and write up their own telephone bills.

Resources: Write or call your local telephone business office for information on films, booklets, kits prepared for school use.

Large local businesses often have telephone trainer sets (switchboard, telephones) which they may be willing to lend out.

Filmstrip: • "The Telephone Workers," Educraft Incorporated, 6475 Dubois, Detroit, Michigan 48211.

Comments From Teachers and Students After Using the Activity

OCCUPATIONAL FOCUS:

- Construction
  - Large Equipment Operators

MATHEMATICS RELEVANCE:

- Estimation
- Recordkeeping
- Time

Activity #22

Subject Area:

Mathematics

EARTH MOVERS

Capsule Activity Description:

Students observe large equipment operators at a construction site and explore the skills involved in operating this type of equipment.

Teaching Prerequisites:

materials: tweezers, ice tongs, pliers, 4 piles of different kinds of material or objects
contacts with community: visit to construction site
approximate preparation time: 1-2 hours
approximate class time: 2½-3 classes

Mathematics Objectives:

to develop skills in estimating, measuring and recording information;
to recognize the use of estimation in real life.

ACTIVITY

This activity has two parts. First the class takes a field trip to a construction site to observe operators of large equipment (i.e., cranes, bulldozers, derricks, steam shovels). Second, students experience operating their own in-class versions of this equipment. These exercises provide students with practice in estimation and recording accurate observable information. Along with these mathematics skills the activity develops important motor skills necessary for overall student growth.

Activity #22

Part I

Arrange for a class trip to a local construction site, preferably one using large equipment. Most communities have construction going on at one time or another throughout the year making this type of trip feasible. Contact the builder or construction company handling a local "job" to inquire if a field trip can be made to their site. (A sign is posted at most sites indicating the company doing the work.) If parents are employed in this type of work you might find it beneficial to call them for assistance in making the appropriate contact or to take part in the trip itself. (For additional information on field trips see the chapter on "Liaison" in the "Resources" section at the back of the manual.)

The purpose of this visit is to observe primarily the large equipment operators and the way in which they handle their machines. Request that one or more of these workers spend approximate 10-15 minutes with the class, explaining his or her job and answering questions.

If a field trip is not possible, invite a willing and available parent or acquaintance who works on construction to class as a guest speaker. Request that he or she come dressed in normal work attire, bringing whatever tools of the trade he or she can to enhance the presentation.

Prior to the trip brainstorm for uses of large construction equipment. Discuss all suggestions.

Examples of various uses:

- Digging holes and moving earth
- Removing earth from the site
- Bringing in earth for fill
- Bringing in supplies and building materials
- Raising building supports

When several uses have been discussed and listed on the chalkboard, ask the class what they would like to know about the people who operate this equipment. Again branistorm as a class; list the questions on the chalkboard and choose the best ones.

Sample questions follow:

- What do you do all day?
- Did you need training for your job?
- What is it like to work all day on such a big piece of equipment?
- Do you like your job?
- Do you mind being alone all day?
- Can you operate more than one type of machine?
- Are a lot of the people you work with your friends?
- Did you have trouble learning how to operate the equipment?
- Did you have trouble at first judging how much earth (or whatever) your machine would move or pick up at one time?
- Does the noise bother you?

Questions are assigned to students to ask the workers. Any other questions students have at the time of the field trip may also be asked if time permits.

Part II

When you return from the field trip divide the class into four groups. Listed below are four pieces of "equipment."

- tweezers
- ice tongs
- pliers
- arms (students use their own arms)

Assign a different piece of equipment to each group.

Make four piles of objects –– for example, one of books, another of crayons, a pile of blocks and a pile of paper. Each pile corresponds best to one piece of equipment (tweezers/paper, ice tongs/blocks, pliers/crayons, arms/books). Place each pile in a corner of the room.

In turn, the groups move from pile to pile with their piece of equipment. At the various stations, each student takes his or her turn, moving the objects in the pile to a spot 5-10 feet away, the next student moves it back, and so forth. As students take their turns, other students keep track of:

- the time it took to move the entire pile to the new spot;
- the number of trips involved;
- the efficiency of the operator (number of trips without droping anything).

Students take turns recording this information on a data sheet or chart –– see sample below.

Type of equipment: ice tongs

	Name of Student	Amount of Time to Move Pile	No. of Trips to Move Pile	No. of Trips Without Dropping Anything
Books	Jean Davis	3 minutes	7	5
	David Li	2½ minutes	5	5
	Bob Crosby			
	Kathy Luongo			
	Philip Griffin			
Crayons	Jean Davis			
	David Li			

and so forth

When the exercise is completed, the students discuss the following:

- At which pile was your piece of equipment most effective?
- At which pile did you, as a group, do the best job according to:
  - time
  - trips
  - efficiency
- Did you like this work? Why?
- Would you like to do this kind of work everyday? Why?

Activity #22

The class decides which piece of equipment is best suited for moving a particular pile. The machines are placed at the appropriate piles. Again, in their same groups, students move from pile to pile, experiencing each machine and its appropriateness to that type of work and load. These findings are recorded on a separate chart.

At the end of the session discuss with the class:

- Were you better at operating one machine than another? If so, why?
- How did you know how much your machine could pick up and move at one time?
- If you had to hire someone to operate this kind of equipment, how would you know who was the best person for the job?

Circle the names on the charts of the students who had the best work records and post the charts on the bulletin board.

Prior and Subsequent Useful Activities:

- You can review appropriate new vocabulary prior to the field trip.
  - steam shovel
  - crane
  - derrick
  - bulldozer
  - overtime
  - union

Resources: King Comics: "Popeye and Construction Careers"

Books:

- *The Big Book of Building and Wrecking,* George Zaffo, Grosset & Dunlap, Inc., 51 Madison Avenue, New York, New York 10010
- *Tools for Building,* Jerome Leavitt, Children's Press, 1224 West Van Buren Street, Chicago, Illinois 60607
- *Let's Take a Trip to Watch a Building Going Up,* Putnam, 200 Madison Avenue, New York, New York 10016

Film:

- "Machines that Move Earth," Film Associates, 11014 Santa Monica Boulevard, Los Angeles, California 90025

Comments From Teachers and Students After Using the Activity:

Activity #23

Subject Area:
Mathematics

OCCUPATIONAL SETS

OCCUPATIONAL FOCUS:

- General Career Awareness

MATHEMATICS RELEVANCE:

- Sets

***Capsule Activity Description:**

Students play a game with occupational flash cards, drawing sets of tools/objects associated with a particular occupation.

Teaching Prerequisites:

materials: flash cards, paper, crayons or pencils
contacts with community: none
approximate preparation time: 30 minutes
approximate class time: 1 class – repeated when desired

Mathematics Objectives:

to develop an understanding of and/or reinforce the concept of sets.

ACTIVITY

This activity utilizes flash cards to develop or review the concept of sets. Students are shown a picture of a worker and several objects, some related, some not, to the occupation illustrated. From the objects on the card students form a valid set of tools and/or objects associated with the career in question.

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*The core idea for this activity came from an activity developed by Cobb County Occupational and Career Development Program, Marietta, Georgia. We are grateful for permission to use it. The original activity is part of *Career Education Instructional Materials*, K-6, Illinois Curriculum Management Center under Contract to the Office of Education, Department of Health, Education and Welfare which may be ordered from Career Development Program, Cobb County Public Schools, 47 Waddell Street, Marietta, Georgia 30060 for approximately $1.00.

Activity #23

Not only does the activity give students practice in forming sets, but it also aids in the recognition of job titles.

The activity can be played by the class or by small groups of students in their free time.

Procedure:

- Distribute at least three sheets of paper to each student. The paper is folded in half to form two rectangles –– two on the front and two on the back. Each student has a pencil or crayon on his or her desk.
- Hold up a flash card for the class to see. Say the names of the occupation and objects illustrated on the card.

For example,

Police Officer – squad car, badge, broom, stove, gun

- Students draw a large circle in one of the empty blocks. Within that circle is drawn the set of tools or objects from the flash card that can be associated with the occupation. Allow a sufficient amount of time for all students to complete their sets. Advise students that this is not a drawing contest. Their drawings need only resemble the object they are trying to reproduce.

  If students think of objects that do not appear on the flash card, but that can be associated with an occupation, these should also be included in the set.
- Students read aloud the number of objects in their set and the names of the objects.

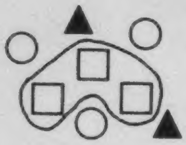
After each exercise discuss with the students some or all of the following issues:

- How are the objects in your set related?
- What makes it a set?
- How are the objects in the set used by ____________?
- Do you know anybody who works as a ____________? What does that person do?

Options:

1. The flash cards can be reproduced and distributed to each student. Instead of drawing the objects, students put a circle around the objects to form the set.

   Example: Draw a circle around
   all the square objects
   to form a set.



2. The activity can be played as a team game and points awarded for each valid set. The team with the most points at the end of the activity wins.
3. If you or your students add cards to the pack, here are some ideas.
   - People who work outdoors.
   - People who wear uniforms on the job.
   - People who use their hands at work.

- People who work with money.
- People who work with food.

Prior and Subsequent Useful Activities:

- Students can bring in tools from home, examine and use them.
- Students can make up their own flash cards for individual or class use.

Resources:

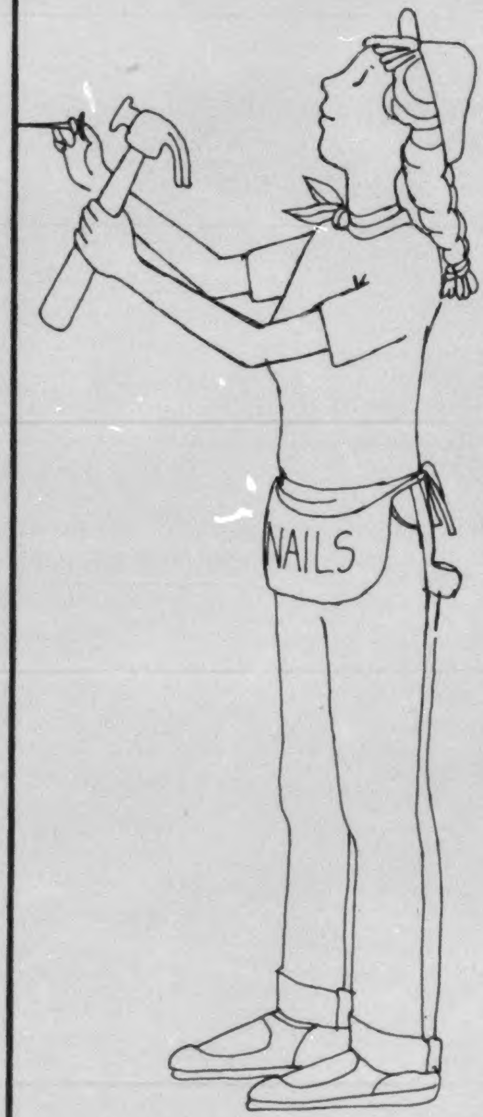
Mathematics for the Elementary School Teacher – "An Introduction to Sets"

Magazines, collected by students or from doctors' offices, can be used to find pictures for flashcards.

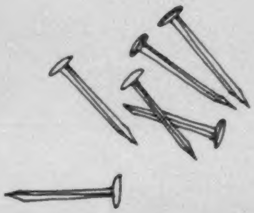
Comments From Teachers and Students After Using the Activity:

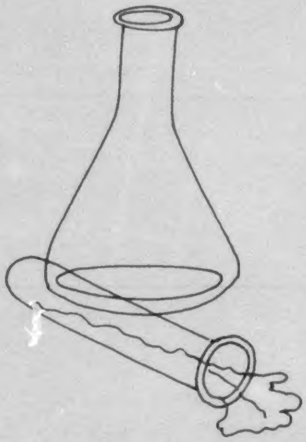
SETS

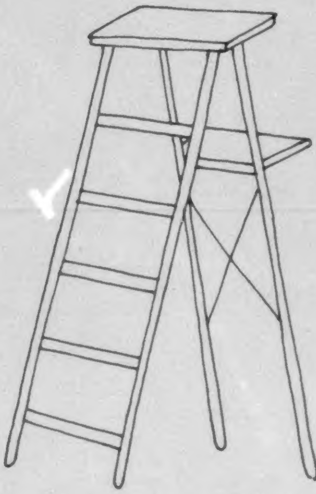
Carpenter:	nails, hammer, ladder
Construction Worker:	shovel & pick, steam roller
Doctor:	stethoscope, bag & thermometer
Farmer:	pitchfork, tractor
Homemaker:	mixing bowl & spoons, bread, stove
Pilot:	empty set
Sales Clerk:	cash register, money
Secretary:	pencil, typewritter, telephone
Student:	pencil & crayons, pink pearl eraser, books
Teacher:	chalkboard, books, pink pearl eraser
Truck Driver:	truck

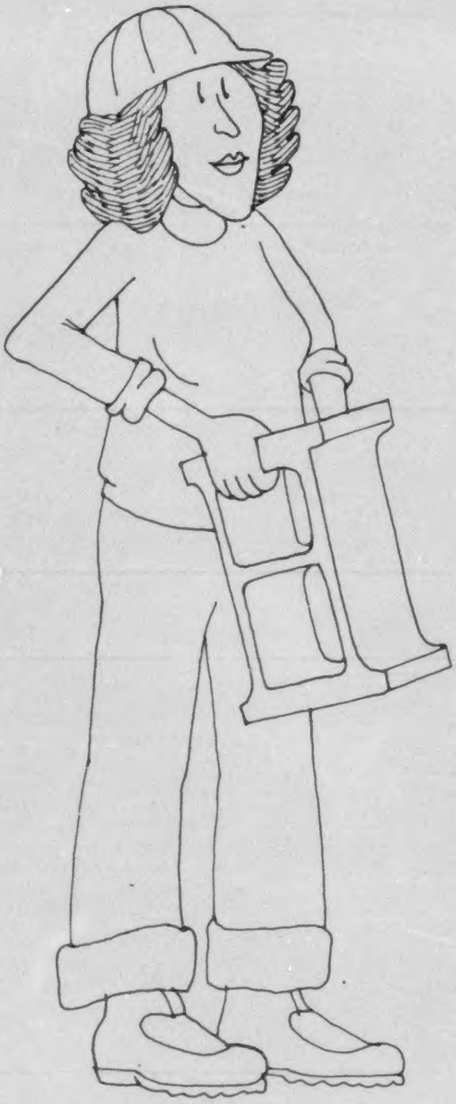


CARPENTER

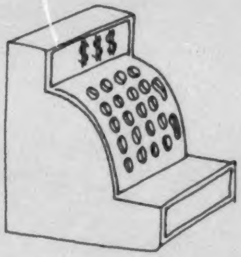


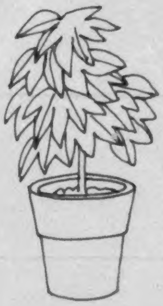


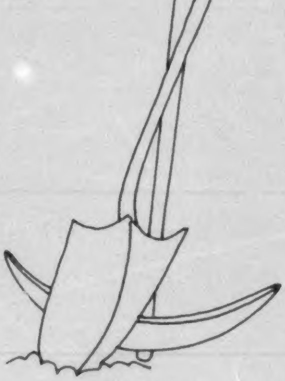


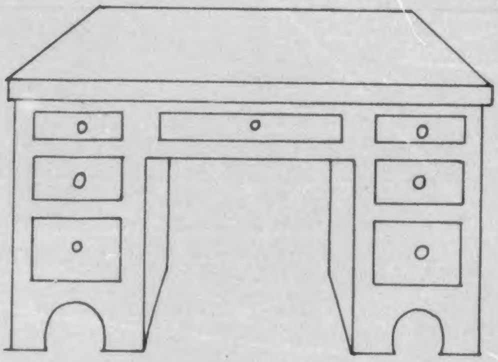


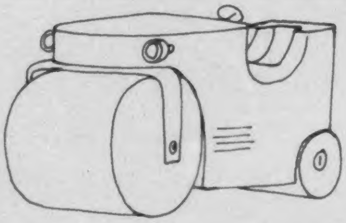
CONSTRUCTION WORKER

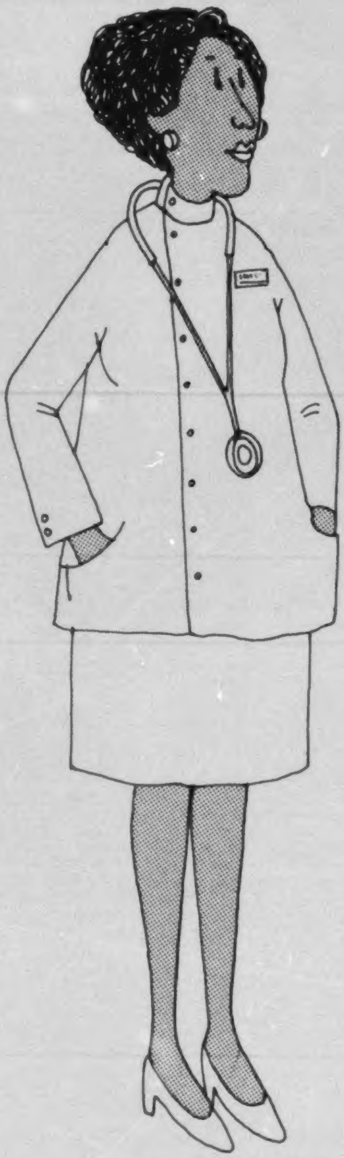




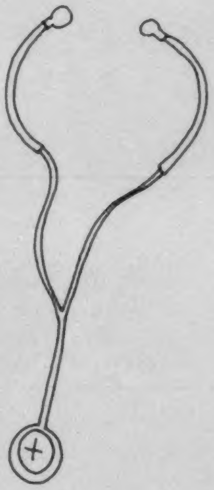


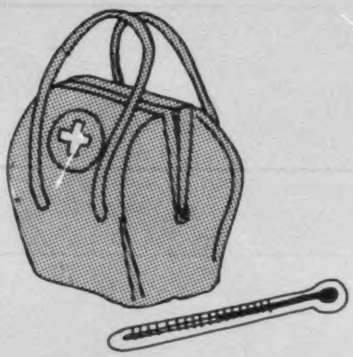


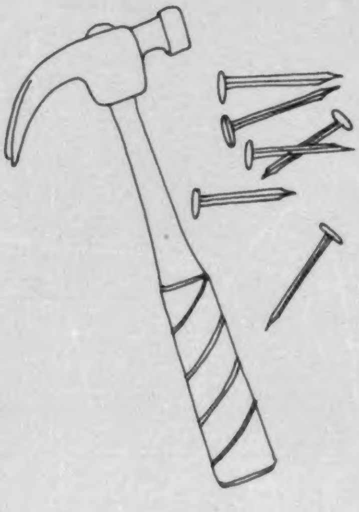


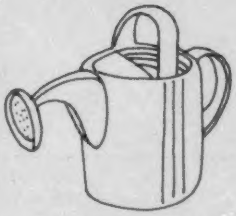


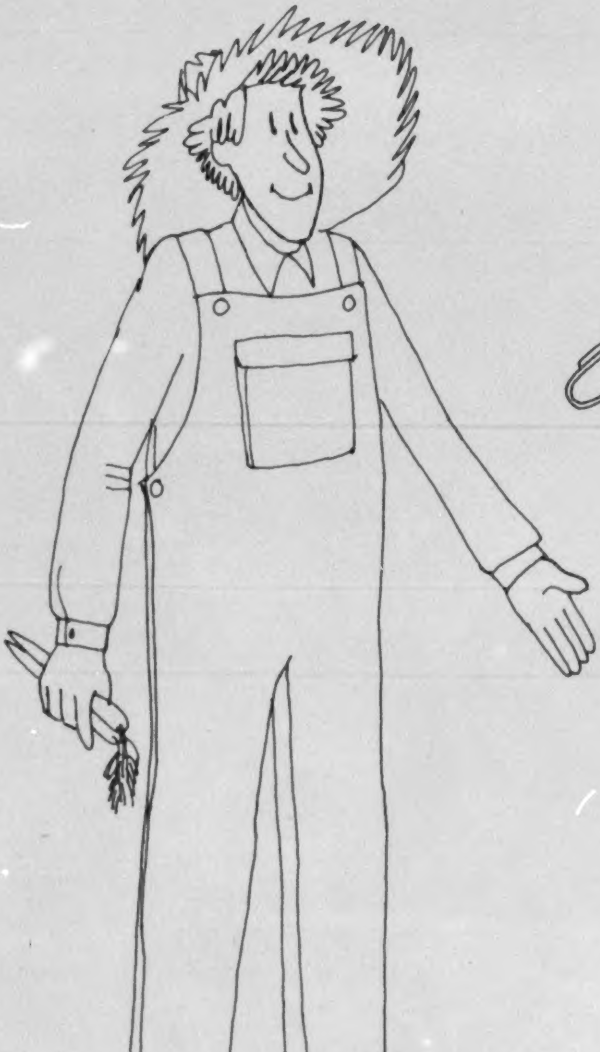
DOCTOR



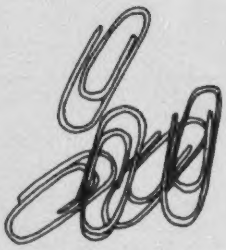


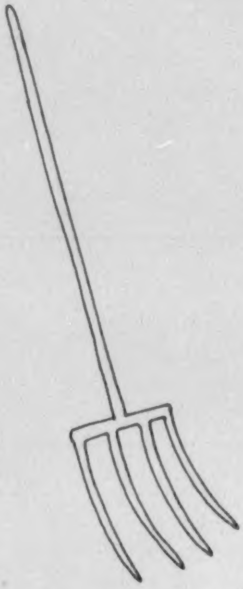


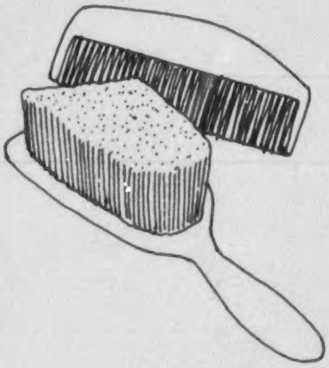


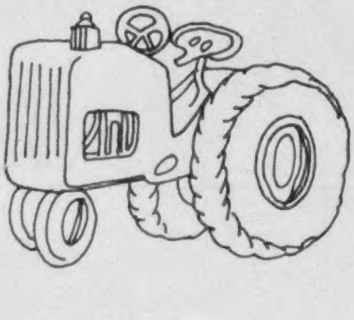


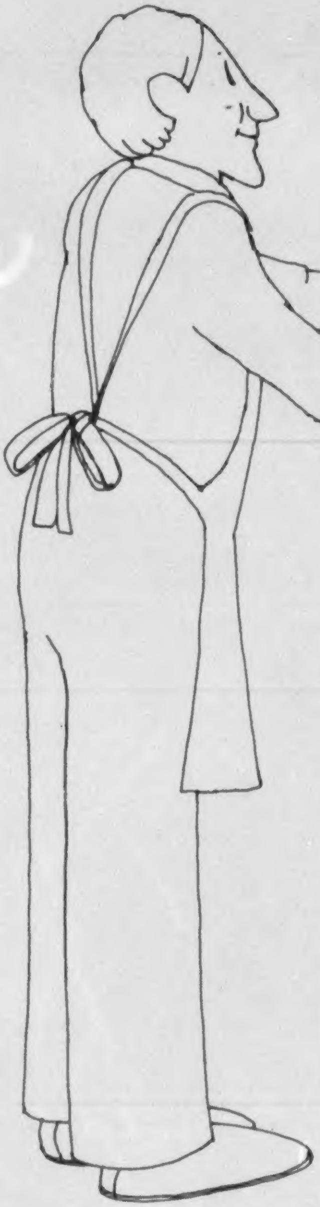
FARMER



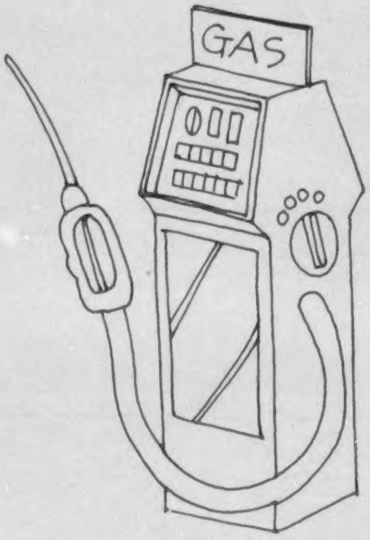


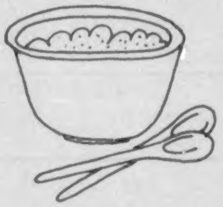


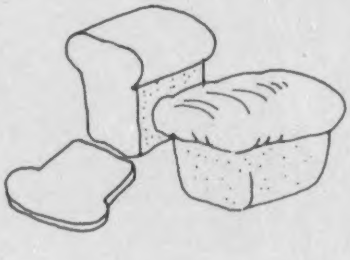


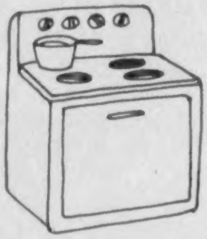


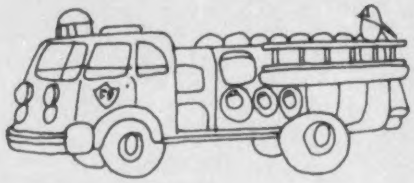
HOMEMAKER

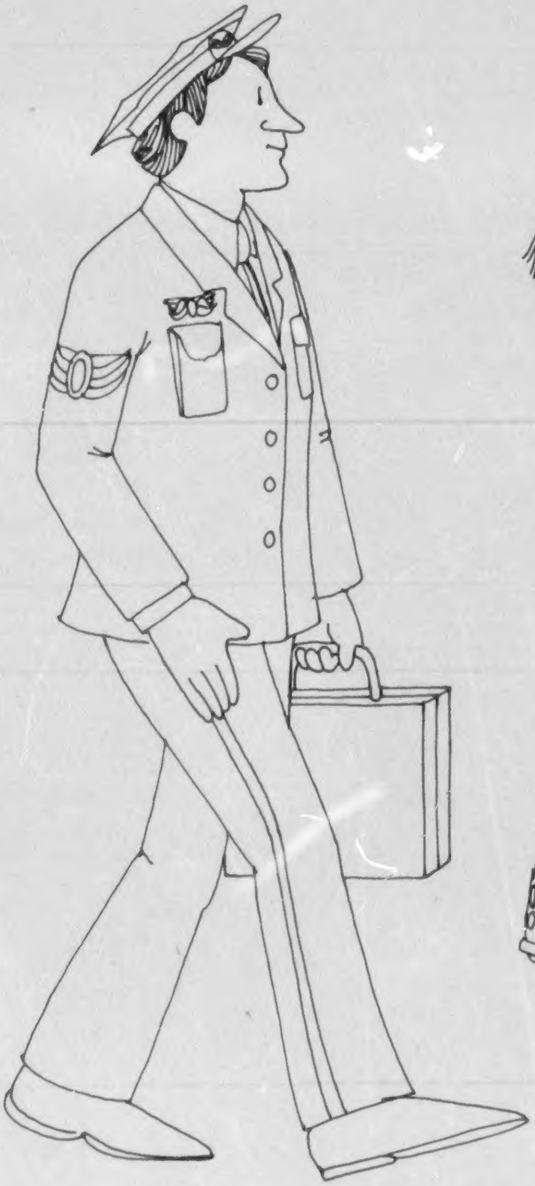




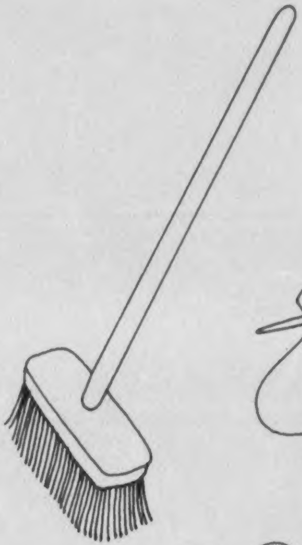


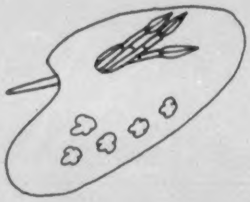


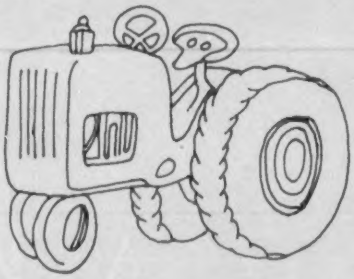


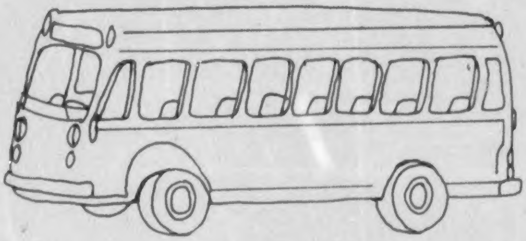


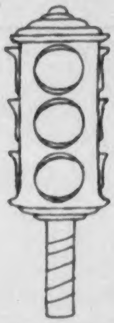
PILOT

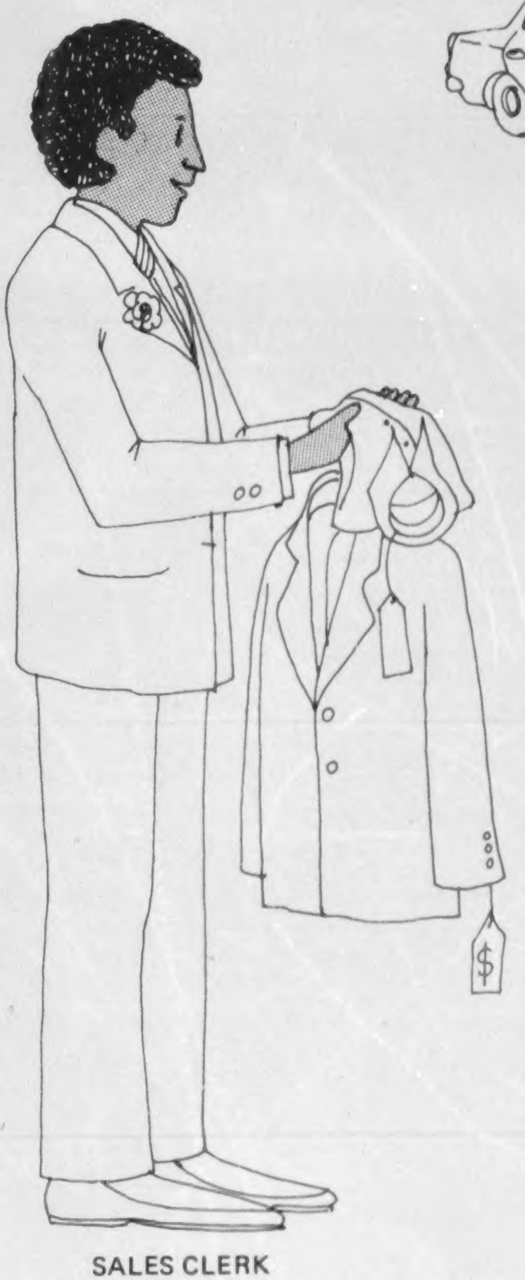




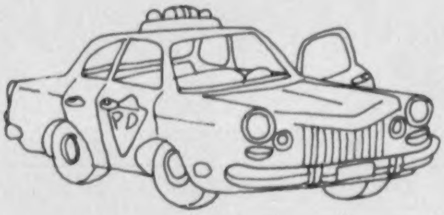


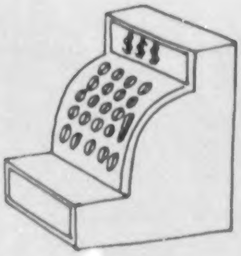


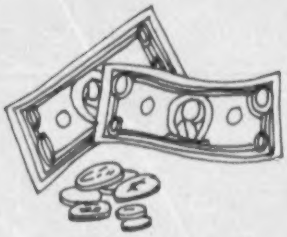


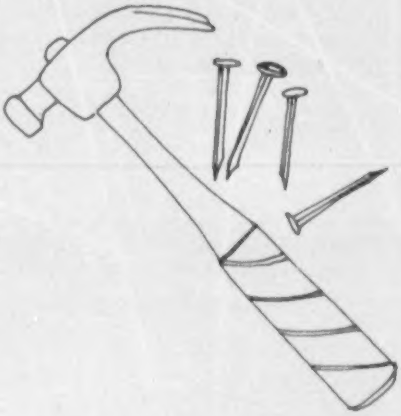


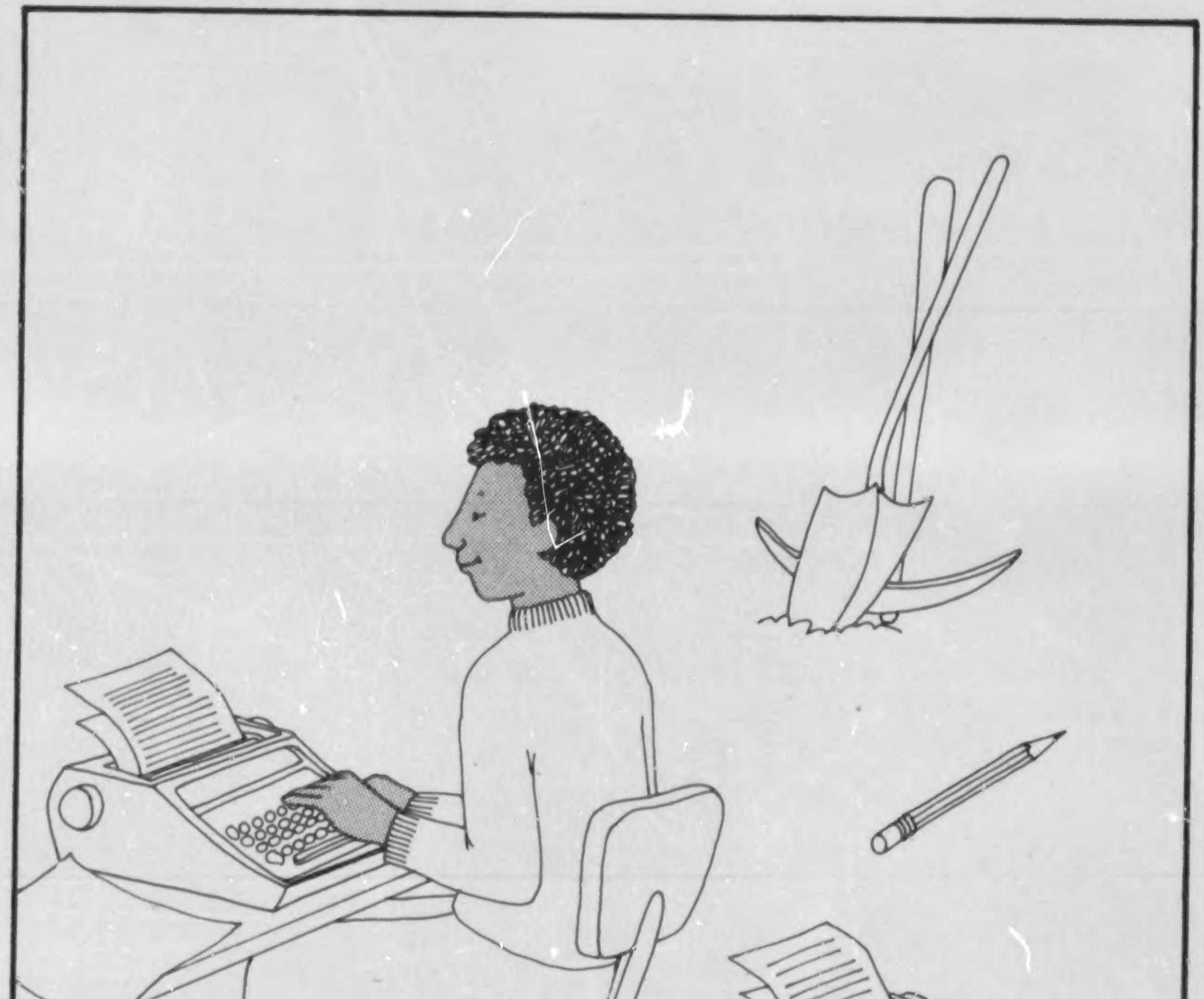
SALES CLERK

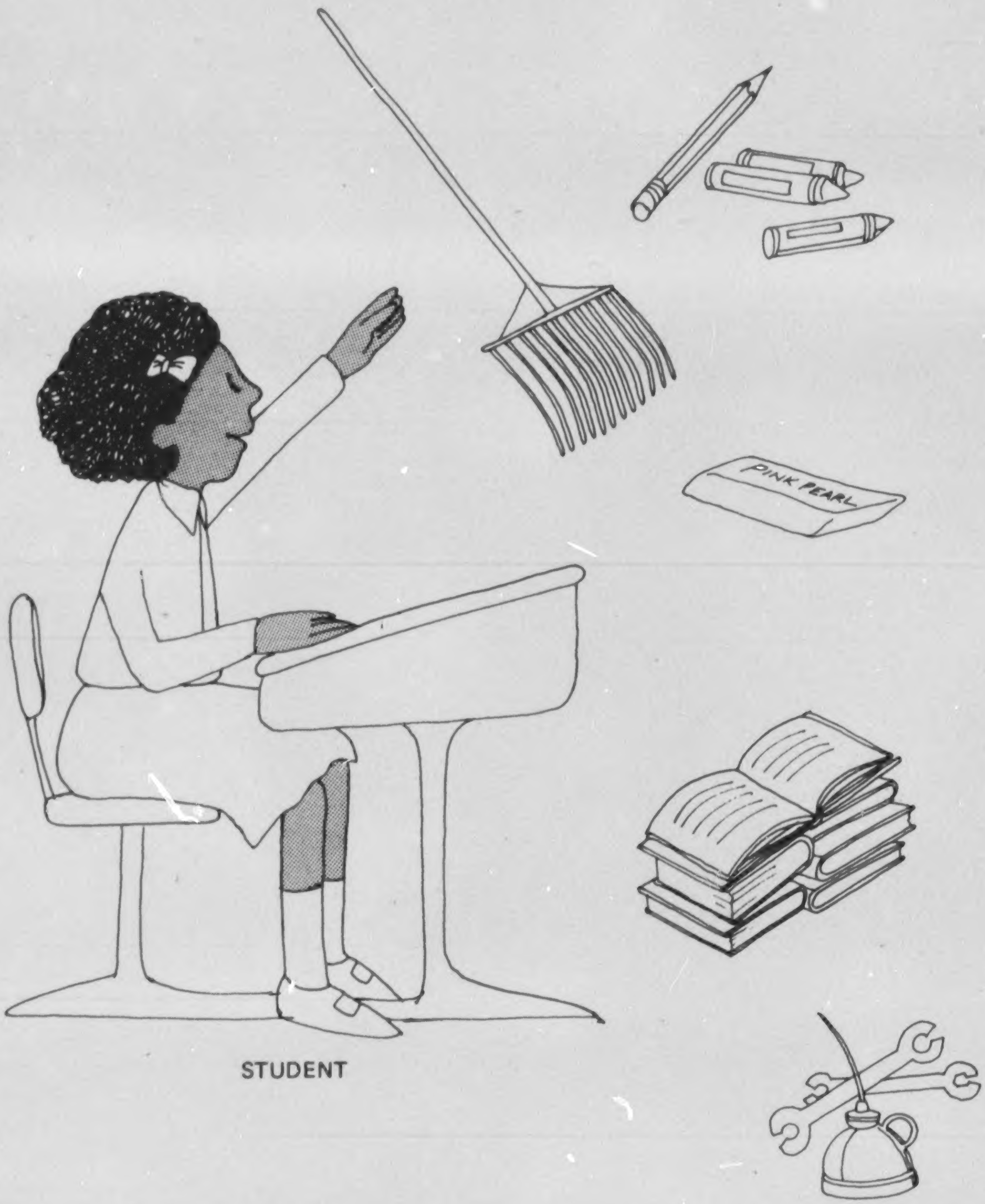


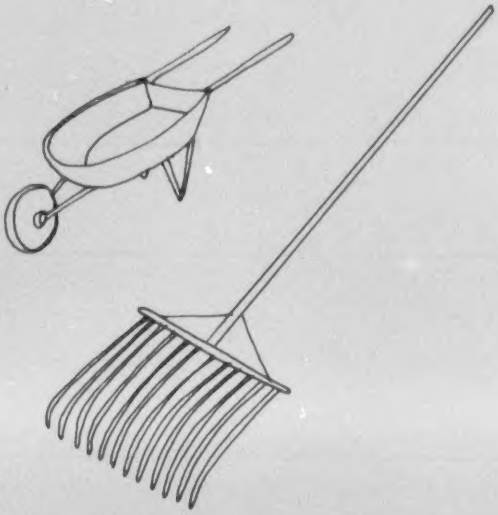


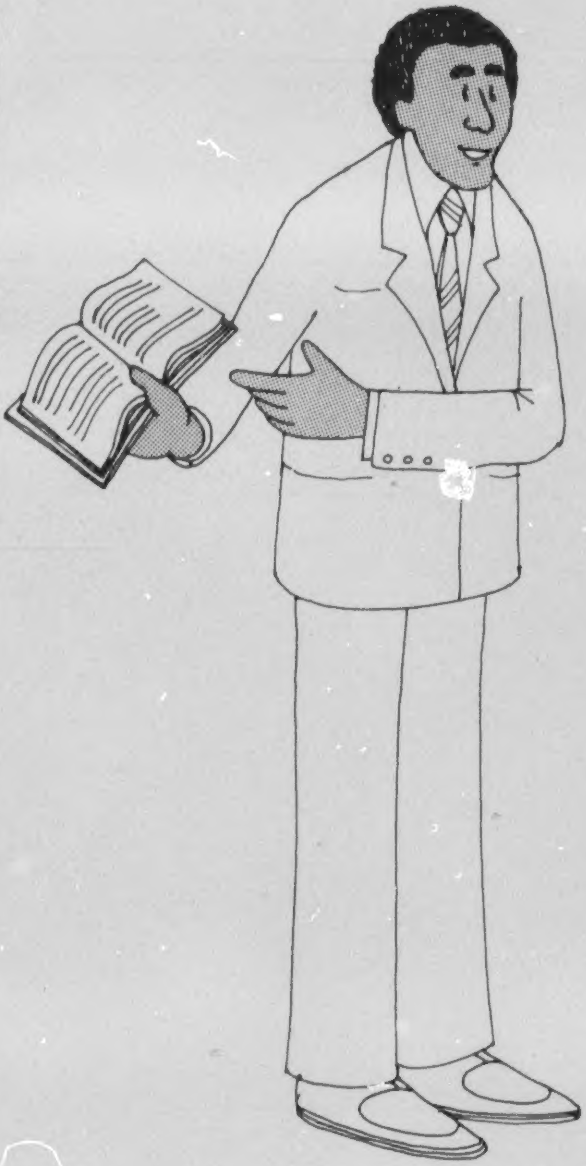




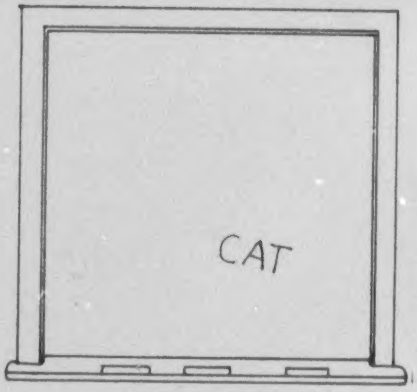

SECRETARY

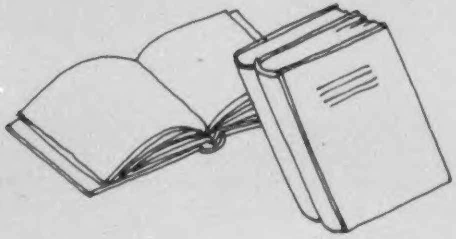

PINK PEARL
STUDENT

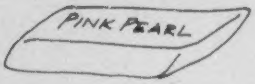


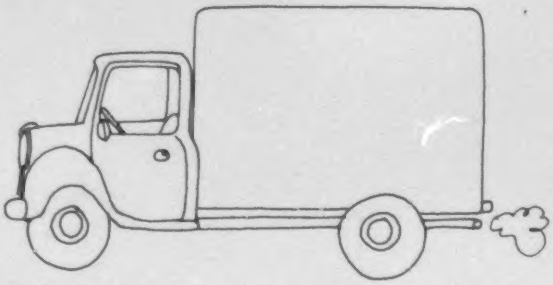


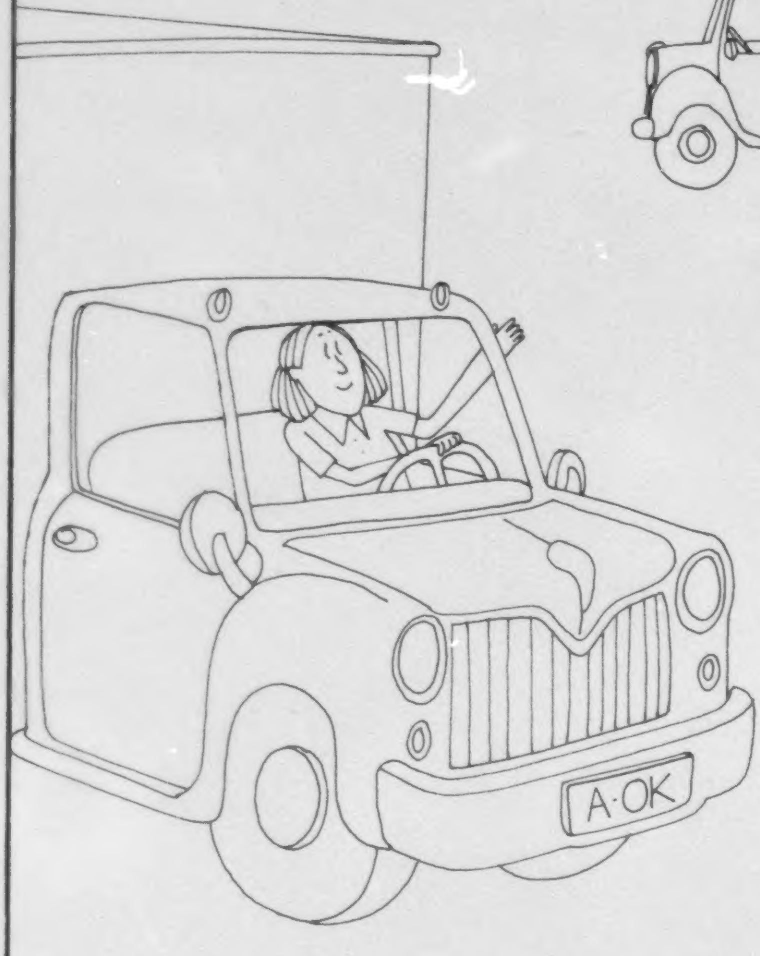
TEACHER











TRUCK DRIVER

Activity #24

Subject Area:
Mathematics

OH FUDGE!

OCCUPATIONAL FOCUS:

- Baker
- Chef
- Homemaker

MATHEMATICS RELEVANCE:

- Measurement
- Metric System
- Addition
- Subtraction
- Multiplication
- Division
- Estimation
- Money
- Fractions

Capsule Activity Description:

Students visit a bakery or commercial kitchen and hold a class bake sale.

Teaching Prerequisites:

materials: cooking utensils, ingredients for making fudge (see attached recipe), crayons, construction and/or poster paper
contacts with community: visit to bakery or commercial kitchen
approximate preparation time: 1½-2 hours
approximate class time: 3-4 classes

Mathematics Objectives:

to develop an understanding of the concept of measurement and its application outside the classroom;
to reinforce basic mathematics skills.

ACTIVITY

This activity introduces students to several occupations that use measurements routinely in their work. Students then apply their measurement skills by making fudge to sell at a class bake sale. The activity gives students practice in basic math skills (addition, subtraction, mulitiplication, division) as well as reinforcing skills associated with estimation and money.

The activity can be integrated into your mathematics curriculum as a review exercise of basic skills or as follows.

- When introducing students to measurement, the activity provides an opportunity for it to be studied in a practical context, thereby giving it relevance.

Activity #24

- The activity provides practice using the metric system, whether you have just introduced the system or are reviewing it. (The attached recipe has been written in both metric and standard U.S. measures for your convenience).

Arrange for a class visit to a local bakery or commercial kitchen. If a parent is employed in one of these businesses, contact him or her for possible assistance in making your arrangements. The school principal or cafeteria workers also may be of some help to you. Otherwise, consult the Yellow Pages for a local establishment and make your contact directly. It is important for students to see the kitchen in operation and people cooking, so plan your trip to coincide with those hours of work. (For additional information on field trips, see the chapter on "Liaison" in the "Resources" section at the back of the manual.)

If a field trip is not possible, a parent homemaker can be asked to class to explain and demonstrate his or her use of measurements and other mathematics skills. Another option is to observe school cafeteria workers preparing lunch.

The main focus of the trip is to observe workers using their mathematics skills, particularly measurement. If permitted, these workers explain what they do on the job, hours they work, and training, and comment on how they use their mathematics skills.

After the trip discuss the following issues with your students.

- Why would someone want to be a (baker/chef/homemaker)?
- When we think of cooking, we usually think of mothers or women. When we think of chefs, we usually think of men. Why aren't more chefs women?
- We visited a (bakery, restaurant kitchen) today. We discovered that those people worked (very early in the morning, very late into the night). Would you like to work those hours?
- If you were not accurate in your measurements, what might happen to what you are cooking? What might happen to your job?

The second part of the activity involves a class bake sale. Fudge is made in class and students voluntarily contribute baked goods **they** made at home.

Check with your principal for permission to have a bake sale prior to starting work.

Write the fudge recipe on the chalkboard (recipe attached). Working in pairs, students calculate how much of each ingredient is needed to make "X" batches of fudge –– one batch of fudge per small group of students. List total item quantities on the chalkboard in shopping list fashion.

Next, students determine the cost of the fudge. In order for them to do this, you must know the cost of the ingredients. Current (as of this writing) prices are noted on the recipe. List the cost of the individual ingredients on the chalkboard. As a class estimate the number of pieces of fudge you will get in each batch (in this instance, the estimate is 30 pieces). Working again in pairs, students calculate the cost of one piece of fudge. (Under these circumstance, the cost is approximately 3½¢.)

The class determines what to charge for the fudge to recover the cost of the ingredients and to make a small profit for the class treasury.

A list of other bake sales items being contributed by various students is put on the chalkboard. The class establishes fair prices for each item. Since these are contributed free, the prices can be minimal and no calculations need to be performed.

After the pricing session, briefly discuss the following:

- Why does it help to know how much ingredients cost?
- How much profit are we making on the fudge? On the other baked goods? Why is there such a big difference?
- If you were a grocer, how would you determine how much to charge for a can of soup?
- If you were a farmer, how would you determine how much to charge for a bushel of corn?
- If you were a (baker, restaurant owner) what would you do with your profit?

Spend a few minutes in class making posters for the bake sale to give the school community adequate notice of your project.

Assign students to "baking" groups. Only half the class at a time makes fudge. The groups not baking, decorate and make signs and price lists for the booth. The fudge is best made one day before the sale as it must be refrigerated.

Remind the students who volunteered to bake at home about their commitment. The day of the sale these students describe to the class how they made their baked goods and what kinds of measuring they had to do for it.

Students volunteer or are assigned to one of three jobs on bake sale day: "booth set-up," "sales" or "booth clean-up." Remind students these jobs are all equally important to the success of the project –– one being no more important than another.

After the sale hold a concluding discussion.

- What made the bake sale a success? Or why wasn't the sale successful?
- If you were a baker, would mathematics skills be helpful to your job?

Useful Prior and Subsequent Activities: Students can practice their metric measures skills by converting recipes in U.S. standard measures to the metric system and compiling a cookbook.

Resources: standard cookbooks

Book: • *Let's Eat Out,* John Jones, Melmont Publishers, Inc., 1224 West Van Buren Street, Chicago, Illinois 60607

Comments From Teachers and Students After Using the Activity:

Activity #24

SNOW FUDGE

(No cooking Necessary)

2 cups confectioners sugar	(50¢)
½ cup chopped nuts	(30¢)
1 3oz. package cream cheese	(19¢)
1 teaspoon vanilla	
dash of salt	(4¢)

OR

.48 liters confectioners sugar
.12 liters chopped nuts
1 84 gram package cream cheese
5 milliliters vanilla
dash of salt

1. Combine cream cheese, vanilla, and salt, and beat until smooth.
2. Gradually beat in confectioners sugar until well blended.
3. Stir in nuts.
4. Spread evenly in a greased 9" X 5" or 22.5 centimeters X 12.5 centimeters pan.
5. Refrigerate until firm, then cut into squares.

OCCUPATIONAL FOCUS:

- Careers in Banking
  - Tellers
  - Bank Officers

MATHEMATICS RELEVANCE:

- Addition
- Subtraction
- Decimals
- Percent
- Record Keeping
- Money

Activity #25

Subject Area:

Mathematics

BANK IT

Capsule Activity Description:

Class learns about banking procedures, sets up its own bank and operates it.

Teaching Prerequisites:

materials: deposit and withdrawal slips (5 per student), savings account sheets (1 per student), information sheets (1 per student), manila folders (1 per student) (sample forms attached)
contacts with community: visit to bank
approximate preparation time: 1-2 hours
approximate class time: 2-3 classes plus free time for "banking hours"

Mathematics Objectives:

to reinforce the skills in addition and subtraction of 2 and 3-digit numbers;
to introduce decimals and the concept of percent;
to develop record keeping skills

ACTIVITY

This activity introduces your students to careers in the banking industry and to the application of mathematical skills and concepts by both the bank employee and the bank customer. The activity can easily be integrated into the curriculum as a review of addition and subtraction skills of 2 and 3-digit numbers. It also can aid in the introduction and devleopment of the concepts of decimals and percent. To do this the activity first introduces students to various banking procedures; these practices are then put to use in a classroom bank.

Introduce banking to the class. In your presentation consider covering the following points:

- Why we have a banking system
- Ways in which it operates

Activity #25

- Various mathematical concepts used in the banking industry

To further an understanding of banking plan a field trip to a local bank for either a small group of students or the whole class. The size of the group to go may depend on the institution you approach. Consider making the trip either before or after banking hours. Contact the local bank manager to make arrangements for the trip, or your school principal, a co-worker, or a parent may be able to act as an intermediary and aid you in your plans. (See the chapter on "Liaison" in the "Resources" section at the back of the manual for further assistance with your field trip.)

While at the bank, individuals, groups, or the class as a whole open savings accounts (using as little as $1). If this decision as to who opens accounts is not made for you by the bank, it should be made in light of the financial situation of your students. If there is any doubt as to a student's ability to obtain the money to open a savings account, a class account(s) is the better option.

To obtain accounts students:

- speak with an officer of the bank about opening a savings account;
- fill out the necessary forms; and
- receive a savings account passbook.

After processing the passbooks, the bank officers explain their jobs to the students as well as the jobs of the other bank employees, especially those people whom the students come in contact with as customers of the bank. If possible, these people are observed on the job.

If only a small group of students were able to make the trip, they report to the class on the procedures they followed to open the account(s) as well as the people they met and observed.

You and your class are now ready to open your own bank.

Assign or elect several students as "officers" of the class bank to aid student customers in opening accounts. Review with them their duties as bank officers and the information questionnaire customers will fill out. When they are sure of their work and are set up for business at points around the room, open the bank to the class. Student customers see an officer to fill out the information sheet to open their savings accounts. The bank officers:

- Write all customer information on the information questionnaire.
- Collect the money to be deposited (the amounts assigned to each student will depend on their familiarity with 2 or 3-digit numbers).
- Record the amount on the savings account sheet which is given to the students to serve as a passbook.

The officers open their own accounts with each other.

Throughout the life of the bank, which should be until all students have had a turn as teller, you will need several tellers each day to operate it.

Assign students a specific day and post the "teller" schedule.

For example,
Susan, Ramona, Derrick--May 9
Tony, Maria, Jamie--May 10
Mina, Peter, Jose--May 11

Banking procedures follow.

- Tellers make all transactions and initial and date each savings account sheet.
- Student deposit and withdrawal slips are placed in individual manila envelopes so that records are kept on all transactions.
- Tellers double-check each transaction for errors before the savings account sheet is returned to the customer.
- All students are responsible for keeping their own savings account sheets.
- Any errors are reported to an officer.
- All students are required to make one deposit and one withdrawal daily.
- No one may withdraw more than $250 without first speaking with a bank officer and getting his or her signature on the withdrawal slip.
- The bank is open each day at a specific time.

After every five banking days students check their savings account sheets for errors. Any that are found are corrected by the teller at fault.

If your class has worked with percent, you can, at this time, have your students compute their own dividends and add it to their savings.

This is also an appropriate time to discuss some or all of the following issues:

- What would happen if tellers were not accurate in their work?
- If people thought that bank employees made many mistakes, what might happen?
- If you were a bank president and you had to hire a new teller, what kind of person would you look for?
- If you were a bank employee and you had just been fired, what might have been some of the things you did wrong?
- Bank tellers have much lower salaries than construction workers. Why do you think this is so?

Useful Prior and Subsequent Activities

- Students can help cafeteria workers by taking lunch count, collecting money, and balancing out.
- At the appropriate level you can introduce loans and how they work.
- Parents who are employed by a bank can come to class as guest speakers.

Resources: The game **Monopoly** by Parker Bros. would be a helpful and fun resource for children to play in their free time.

Write to the Federal Reserve Bank in your region for banking information written for students.

Activity #25

FEDERAL RESERVE BANKS

Publication Services
Division of Administrative Services
Board of Governors of the Federal
Reserve System
Washington, D.C. 20551

Federal Reserve Bank of Atlanta
Federal Reserve Station
Atalnta, Georgia 30303

Federal Reserve Bank of Boston
30 Pearl Street
Boston, Massachusetts 02106

Federal Reserve Bank of Chicago
Box 834
Chicago, Illinois 60690

Federal Reserve Bank of Cleveland
P.O. Box 6387
Cleveland, Ohio 44101

Federal Reserve Bank of Dallas
Station K
Dallas, Texas 75222

Federal Reserve Bank of Kansas City
Federal Reserve Station
Kansas City, Missouri 64198

Federal Reserve Bank of Minneapolis
Minneapolis, Minnesota 55440

Federal Reserve Bank of New York
Federal Reserve P.O. Station
New York, New York 10045

Federal Reserve Bank of Philadelphia
P.O. Box 66
Philadeiphia, Pennsylvania 19105

Federal Reserve Bank of Richmond
P.O. Box 27622
Richmond, Virginia 23261

Federal Reserve Bank of St. Louis
P.O. Box 442
St. Louis, Missouri 63166

Federal Reserve Bank of San Francisco
San Francisco, California 94120

Local savings banks often publish booklets on banking practices for students.

Comments From Teachers and Students After Using the Activity:

Activity #25

WITHDRAWAL SLIPS

Amount: ______

Date: ______

Name: ______

DEPOSITS

	Amount
Cash	$
1.	
2.	
3.	

Total: ______

Date: ______

Name: ______

SAMPLE INFORMATION QUESTIONNAIRE

Name: ______

Address: ______

Phone: ______

Parent's Name: ______

Age: ______ Date of Birth: ______

Amount to Deposit: ______

SAVINGS ACCOUNT SHEET

	Date	Withdrawal	Deposit	Balance	Teller
1					
2					
3					
4					
5					
6					
7					
8					
9					

OCCUPATIONAL FOCUS:

- Travel Agent
- Transportation Representative

MATHEMATICS RELEVANCE:

- Time
- Money
- Distance
- Addition
- Subtraction
- Multiplication
- Logic

Activity #26

Subject Area:

Mathematics

TRAVEL, TIME, AND MONEY

***Capsule Activity Description:**

Acting as travel agents, students arrange trips via different modes of passenger transportation.

Teaching Prerequisites:

materials: "scratch" paper, pencils, construction paper, crayons
contacts with community: travel agent comes to class as guest speaker
approximate preparation time: 1-2 hours
approximate class time: 2-3 classes, repeated when desired

Mathematics Objective:

to develop the concepts of time, money and distance;
to reinforce basic mathematics skills

ACTIVITY

This activity develops the concepts of time, money and distance while providing for review of basic mathematics skills. Students answer problems posed by "Place Cards," by determining how long a trip will take and how much it will cost using various modes of transportation. Students compare possible solutions and decide which answer is best suited to the particular situation outlined on the Place Cards. The activity not only proves to be a valuable mathematics exercise but also provides a review of or introduction to a study of geography and transportation.

**Transportation Game.*, © Abt Associates Inc., 1972, (excerpted here by permission). Complete classroom kit available at $24.00 plus $1.50 shipping and handling from: Games Central, 55 Wheeler Street, Cambridge, Massachusetts 02138.

Activity #26

To introduce the exercise invite a travel agent to class to explain his or her job to your students. If a parent is employed in this profession, he or she might be willing to come to class as your guest speaker, or assist you in securing one. Various school personnel may also be of help to you in locating a speaker. All else failing, call a local travel agency to observe operations and ask questions. Whichever option you choose, the travel agent describes his or her job, how he or she got into the field, what kind of training was needed, what the benefits are, and answers any and all questions the students may have.

The game that follows gives your class an opportunity to act as travel agents and to explore on their own this occupation. It can be played by the whole class or in a small group of eight. Students, acting as travel agents, are given "Place Cards"* which tell the size of the party making the trip, the points of departure and destination, purpose of the trip, time constraints, and the funds available for the journey. Travel agents** plan the trips according to the above factors by consulting with representatives of various transportation industries--busline, airline, train, and automobile drivers' club. From these representatives, travel agents get information concerning fare and time schedules* with which they make their choices and determine the most appropriate way for their customers to travel.

Included in the game is a set of transportation schedules. These have the individual costs already calculated and need only be added by and coordinated with the time constraints as outlined on the Place Cards.

Prior to play select four students to ask for volunteers to be transportation representatives for the first game (students switch off for the second game). If a large number of students are playing, 20 or more, it might be wise to have eight transportation representatives at one time--two for each transportation mode. Arrange the representatives in distinct sections of the room. Representatives make signs for their company (Wingless Airline, Trackless Trolley Train Company, What-A-Bus Company, Hitch-A-Ride Drivers' Club) and are given their respective schedules. If two students are acting as transportation representatives, each takes half the schedules.

The rest of the class acts as travel agents. They too make signs for their agencies (Jones, Jones and Jones Travel; Take-A-Tour, Inc.; Travel Company) and post them on their desks. Each agent receives a Place Card. The cards have been written for three levels of students. Of the sample cards included, three contain relatively simple situations involving only one traveler (keeping the caluclations to a minimum), three cards involve complicated conditions due to multiple trips. The other three cards **are of moderate** difficulty.

Tell the travel agents that the **object of the game** is to determine the **mode of transportation and time of departure that best fits the conditions indicated on their Place Cards.** In order to do this, the agents must consult with the various transportation representatives to obtain information on cost, departure times and total trip time. Paper and pencils will be needed for this task. When a student arrives at an appropriate answer (mode of transportation and departure time), it is checked with you. Allow enough time for all students to complete their problems.

If desired, points can be awarded for correct answers as follows. The first travel agent to get the correct answer gets 25 points, second 20 points, and third 15 points. For every correct answer after that within the time limit, the student receives 10 points.

You should expect and permit a large amount of noise during the game, so plan the time it is to be used accordingly.

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*Sample "Place Cards" and Transportation Schedules are provided at the end of the activity.

**Students can work in pairs on each Place Card, making the task less demanding on individual students and providing an opportunity for students to assist each other.

Special Rules:

The following rules are explained to the students:

- Students' answers include mode of transportation and departure time (except for car trips).
- Students figure out the costs only for one way trips.
- All ticket prices are given for one person. Meal prices and motel bills have been calculated for all passengers involved and need only be added once.
- Only adults can drive so children cannot travel by car when going alone.
- If passengers want to go sightseeing they cannot travel by plane.
- Trip time does not include any time spent sightseeing or visiting.
- Children traveling alone pay full adult fare.

At the conclusion of the game the class discusses the following issues:

- In what ways does a travel agent help the traveler?
- If a travel agent makes a mistake in his or her calculations what could happen to the traveler?
- What are some of the advantages and disadvantages of each mode of transportation?

Option: When working with fractions, make up "formula" cards for each mode of transportation. For example, the transportation schedules list only full fare, fares for children are computed using a formula.

bus formula
all adults – full fare
youth – 1/2 fare
babies – 1/3 fare

Useful Prior and Subsequent Activities:

- Students can make up their own Transportation Schedules and Place Cards.
- Students can act out various trips. The transportation representatives take the parts of bus drivers, conductors, engineers or pilots.

Resources:

Official Airline Guide
North American Edition
Reuben H. Donnelley Publication
2000 Clearwater Drive
Oak Brook, Illinois 60521

American Airlines, Inc.
633 Third Avenue
New York, New York 10017

Activity #26

Amtrak
Public Affairs Office
955 L'Enfant Plaza, N.
Washington, D.C.

Greyhound Bus Lines
Greyhound Tower
Phoenix, Arizona 85013

American Society of Travel Agents
360 Lexington Avenue
New York, New York 10017

Travel School of America
1406 Beacon Street
Brookline, Mass. 02146

Comments From Teachers and Students After Using this Activity:

Easiest

1. $75.00 (amount of money that traveler can spend)

Ms. Anderson is leaving Seattle, Washington to go back to college in Denver, Colorado. She wants to leave sometime Saturday afternoon and arrive there by 7:00 p.m. Sunday night.

2. $30.00

Jimmy Cohen (age 11) is going from Chicago, Illinois to Pittsburgh, Pennsylvania to visit a friend he met at camp. His friend's father can pick Jimmy up at the station anytime between 7:00 p.m. and 11:00 p.m.

3. $15.00

Mr. Wiley is going to an important meeting in New York City at 3:00 p.m. Tuesday afternoon. He lives in Boston and he can't leave before 10:00 a.m. Tuesday morning.

Moderate Difficulty

4. $85.00

Mr. DeMarco has to go on a business trip from Chicago, Illinois to Washington, D.C. on Tuesday morning. He wants to take his son and daughter with him if it doesn't cost too much and if he doesn't have to travel longer than 15 hours.

5. $130.00

Anne and Claire Gillis are going to visit their cousins in Wichita, Kansas. Their father can take them to the station in Atlanta, Georgia anytime after 6:00 p.m.

6. $200.00

Mr. and Mrs. Spinelli, their son Joseph and the baby, Polly, are going to Phoenix, Arizona for their vacation. They want to leave Bismarck, North Dakota on Friday soon after Mr. Spinelli gets home from work at 5:00 p.m. and they want to get there within two days.

Most Difficult

7. $75.00

Ms. Abrams is going on a business trip. She has to leave Houston, Texas on Monday morning and be in New Orleans, Louisiana by 11:00 a.m.. She wants to leave New Orleans around 4:00 p.m. in order to get to Memphis, Tennessee by 8:00 p.m.

8. $150.00

Billy Peters and his sister, Jennifer, are going from Pittsburgh, Pennsylvania to Pierre, South Dakota to visit their aunt and uncle. Their father can bring them to the station anytime after 5:00 p.m. and their aunt can pick them up anytime between 9:00 a.m. and 12:00 p.m. the next day.

9. $275.00

On Thursday night Ms. Mayo wants to leave Denver, Colorado by 9:00 p.m. and get home to Houston, Texas by midnight. Then on Friday morning Ms. Mayo, her husband and daughter leave for a vacation in Miami, Florida. They want to get there by noontime.

Answers

Card #	Mode	Departure Time
1.	Train	4:15 p.m.
2.	Bus	8:30 a.m.
3.	Car	
4.	Train	10:30 a.m.
5.	Plane	6:45 p.m.
6.	Bus	6:00 p.m.
7.	Plane	9:15 a.m. and 4:30 p.m.
8.	Train	5:30 p.m.
9.	Plane	8:45 p.m. and 7:45 p.m.

DAILY
TRAIN
SCHEDULE

Chicago, Illinois to Pittsburgh, Pennsylvania

Fare	$24.85
Meals	$ 3.15 (total)
Leaves Chicago	8:00 a.m., 9:30 a.m.
Trip Time	7 hours, 15 minutes

Chicago, Illinois to Washington, D.C.

Fare	Father	$39.96
	Youth	$13.32
Meals	$12.82 (total)	
Leaves Chicago	10:30 a.m., 4:15 p.m.	
Trip Time	11 hours, 15 minutes	

Houston, Texas to New Orleans, Louisiana

Fare	$17.10
Meals	$ 2.90 (total)
Leaves Houston	7:30 a.m., 10:45 a.m.
Trip Time	5 hours, 30 minutes

Atlanta, Georgia to Wichita, Kansas

Fare	$48.10
Meals	$ 9.90 (total)
Leaves Atlanta	8:15 a.m., 3:00 p.m.
Trip Time	13 hours, 15 minutes

Boston, Massachusetts to New York City

Fare	$16.00
Meals	-
Leaves Boston	10:15 a.m., 1:30 p.m.
Trip Time	3 hours

Bismark, North Dakota To Phoenix, Arizona

Fare	Father	$81.25
	Mother	$54.16
	Youth	$27.08
	Baby	Free
Meals	$35.51 (total)	
Leaves Bismark	8:45 a.m., 2:15 p.m.	
Trip Time	1 day, 4 hours, 30 minutes	

DAILY TRAIN SCHEDULE

Pittsburgh, Pennsylvania to Pierre, South Dakota

Fare	$66.10
Meals	$ 6.90
Leaves Pittsburgh	1:30 p.m., 5:30 p.m.
Trip Time	17 hours, 30 minutes

Seattle, Washington to Denver, Colorado

Fare	$62.90
Meals	$ 7.10 (total)
Leaves Seattle	11:30 a.m., 4:15 p.m.
Trip Time	20 hours, 30 minutes

Denver, Colorado to Houston, Texas

Fare	$59.45
Meals	$ 8.55 (total)
Leaves Denver	3:30 p.m., 8:00 p.m.
Trip Time	14 hours, 45 minutes

Houston, Texas to Miami, Florida

Fare	Father	$65.66
	Mother	$43.77
	Youth	$21.88
Meals	$25.69 (total)	
Leaves Houston	10:30 a.m., 1:30 p.m.	
Trip Time	18 hours, 15 minutes	

New Orleans, Louisiana to Memphis, Tennessee

Fare	$24.85
Meals	$ 5.15 (total)
Leaves New Orleans	1:30 p.m., 8:15 p.m.
Trip Time	7 hours, 30 minutes

DAILY BUS SCHEDULE

Chicago, Illinois to Pittsburgh, Pennsylvania

Fare	$16.60
Meals	$ 5.40
Leaves Chicago	8:30 a.m., 3:15 p.m.
Trip Time	11 hours

Atlanta, Georgia to Wichita, Kansas

Fare	$32.20
Meals	$13.80 (total)
Leaves Atlanta	2:00 p.m., 5:30 p.m.
Trip Time	20 hours

Chicago, Illinois to Washington, D.C.

Fare	Father	$25.64
	Youth	$12.82
Meals	$15.52 (total)	
Leaves Chicago	8:45 a.m., 2:30 p.m.	
Trip Time	17 hours, 15 minutes	

Boston, Massachusetts to New York City

Fare	$11.00
Meals	—
Leaves Boston	12:00 p.m., 5:00 p.m.
Trip Time	4 hours, 15 minutes

Houston, Texas to New Orleans, Lousiana

Fare	$11.30
Meals	$ 2.70 (total)
Leaves Houston	6:30 a.m., 1:00 p.m.
Trip Time	8 hours, 15 minutes

Bismark, North Dakota to Phoenix, Arizona

Fare	Father	$54.05
	Mother	$54.05
	Youth	$27.02
	Baby	Free
Meals	$59.88 (total)	
Leaves Bismark	11:45 a.m., 6:00 p.m.	
Trip Time	1 day, 13 hours	

DAILY
BUS
SCHEDULE

Seattle, Washington to Denver, Colorado

Fare	$48.60
Meals	$ 7.40 (total)
Leaves Seattle	2:15 p.m., 4:30 p.m.
Trip Time	1 day, 7 hours

Pittsburgh, Pennsylvania to Pierre, South Dakota

Fare	$44.20
Meals	$ 6.80 (total)
Leaves Pittsburgh	2:30 p.m., 6:30 p.m.
Trip Time	1 day, 2 hours, 30 minutes

Denver, Colorado to Houston, Texas

Fare	$36.90
Meals	$ 9.10 (total)
Leaves Denver	4:30 p.m., 9:30 p.m.
Trip Time	22 hours, 30 minutes

Houston, Texas to Miami, Florida

Fare	Father	$43.78
	Mother	$43.78
	Youth	$21.44
Meals	$28.00 (total)	
Leaves Houston	9:30 a.m., 2:30 p.m.	
Trip Time	1 day, 3 hours, 15 minutes	

New Orleans, Louisiana to Memphis, Tennessee

Fare	$16.50
Meals	$ 5.50 (total)
Leaves New Orleans	3:15 p.m., 10:00 p.m.
Trip Time	11 hours, 15 minutes

DRIVER'S
CLUB
SCHEDULE

Chicago, Illinois to Washington, D.C.

Gas	$12.42
Tolls	$ 3.55
Motel	$25.00 (total)
Meals	$23.03 (total)
Trip Time	1 day, 4 hours, 15 minutes

Bismark, North Dakota to Phoenix, Arizona

Gas	$26.25
Tolls	$ 7.50
Motel	$50.00 (total)
Meals	$87.25 (total)
Trip Time	2 days, 12 hours

Houston, Texas to Miami, Florida

Gas	$21.24
Tolls	$ 6.07
Motel	$50.00 (total)
Meals	$50.69 (total)
Trip Time	2 days, 4 hours, 15 minutes

Denver, Colorado to Houston, Texas

Gas	$17.92
Tolls	$ 5.12
Motel	$25.00 (total)
Meals	$50.96 (total)
Trip Time	1 day, 12 hours, 30 minutes

New Orleans, Louisiana to Memphis, Tennessee

Gas	$7.00
Tolls	$2.00
Motel	$ --
Meals	$6.00 (total)
Trip Time	11 hours, 15 minutes

Boston, Massachusetts to New York City

Gas	$4.75
Tolls	$1.25
Motel	$ --
Meals	$ --
Trip Time	4 hours, 15 minutes

Driver's
club
Schedule

Houston, Texas to New Orleans, Louisiana

Gas	$6.30
Tolls	$1.80
Motel	$ --
Meals	$3.90 (total)
Trip Time	8 hours, 15 minutes

Seattle, Washington to Denver, Colorado

Gas	$23.63
Tolls	$ 6.75
Motel	$30.00 (total)
Meals	$20.62 (total)
Trip Time	2 days, 9 hours

DAILY
PLANE
SCHEDULE

Chicago, Illinois to Pittsburgh, Pennsylvania

Fare	$39.00
Leaves Chicago	2:00 p.m., 4:15 p.m.
Trip Time	2 hours

Chicago, Illinois to Washington, D.C.

Fare	Father	$50.90
	Youth	$33.10
Leaves Chicago	10:45 a.m., 3:15 p.m.	
Trip Time	1 hour, 30 minutes	

Houston, Texas to Miami Florida

Fare	Father	$76.00
	Mother	$57.00
	Youth	$51.00
Leaves Houston	7:45 a.m., 2:00 p.m.	
Trip Time	3 hours	

Atlanta, Georgia to Wichita, Kansas

Fare	$64.00
Leaves Atlanta	10:00 a.m., 6:45 p.m.
Trip Time	2 hours

Boston, Massachusetts to New York City

Fare	$23.00
Leaves Boston	9:30 a.m., 6:30 p.m.
Trip Time	45 minutes

Bismarck, North Dakota to Phoenix, Arizona

Fare	Father	$99.00
	Mother	$74.00
	Youth	$66.00
	Baby	Free
Leaves Bismark	3:15 p.m., 5:45 p.m.	
Trip Time	3 hours, 30 minutes	

DAILY PLANE SCHEDULE

Seattle, Washington to Denver, Colorado

Fare	$78.00
Leaves Seattle	3:00 p.m., 4:00 p.m.
Trip Time	3 hours

Denver, Colorado to Houston, Texas

Fare	$70.00
Leaves Denver	3:00 p.m., 8:45 p.m.
Trip Time	2 hours, 30 minutes

Pittsburgh, Pennsylvania to Pierre, South Dakota

Fare	$77.00
Leaves Pittsburgh	8:15 a.m., 6:00 p.m.
Trip Time	2 hours, 30 minutes

Houston, Texas to New Orleans, Louisiana

Fare	$32.00
Leaves Houston	9:15 a.m., 3:00 p.m.
Trip Time	1 hour

New Orleans, Louisiana to Memphis, Tennessee

Fare	$35.00
Leaves New Orleans	4:30 p.m., 7:35 p.m.
Trip Time	45 minutes

OCCUPATIONAL FOCUS:

- Nurse
- Doctor
- Dietitian
- Researcher

MATHEMATICS RELEVANCE:

- Measurements
- Charts
- Averaging
- Record keeping
- Metric System

Activity #27

Subject Area:

Mathematics

HEALTH MEASURES

Capsule Activity Description:

Students learn about various health professions by visiting the school nurse and maintaining their own health records.

Teaching Prerequisites:

materials: record sheets (1 per student), scale, yardstick or some other device for measuring height, clock with second hand, calorie counter (several), thermometers (optional)
contacts with community: visit to school nurse
approximate preparation time: 1 hour
approximate class time: 2½-3½ classes (spread over a week)

Mathematics Objectives:

to develop skills in record keeping;
to reinforce skills in taking and reading measurements, charting points, addition of two and three digit numbers, averaging;
to draw relevant conclusions from gathered data.

ACTIVITY

Working in pairs, students spend a week gathering vital statistics on themselves. Measurements are taken and findings recorded daily. The activity introduces students to various occupations and the ways in which they track information, draw relevant conclusions, and put those findings to use.

The activity can be integrated into the mathematics curriculum to build skills in a number of areas.

- In a unit on measurement the activity can be implemented when working with length and temperature. It is especially helpful in giving practice in metric measures.
- The activity can be integrated as a review exercise when studying averaging, graphing and record keeping.

- The activity can also be used in conjunction with a science unit on health. It draws on information from the field of health while using mathematics skills to gather and interpret the data.

The class visits the office of the school nurse to observe the ways in which health measurements are taken and how they are used. If you do not know the school nurse, speak to your principal for assistance in setting up the visit. Parents who are doctors or nurses should also be considered as possible guest speakers.

The nurse is to explain what is involved in his or her job. Using a student volunteer, the nurse demonstrates how a person is examined, the tools used, and how an illness is diagnosed and by whom. Special emphasis is given to record keeping, why it is done and noting its wide-spread use in the health professions.

In order to explore more fully the measurement and record keeping aspects of the health professions, students pair off for the purpose of maintaining each other's health records for a period of one week. A specific time is set aside each day, preferably after lunch, for taking the health readings. At these sessions first one student acts as nurse, then the other. Arrange for three or four adults-–other teachers or school personnel-–to join in this activity for comparison purposes.

The first session is the longest due to time spent filling in the "information" section at the top of the Health Record (see sample) and explaining the various procedures used in the activity. Invite the school nurse to the classroom to aid in demonstrating these procedures to the students.

Directions for sessions one through five follow:

- Name, address, date of birth, eye and hair color are filled in at the top of the health record (session one only).
- Weight and height are taken by student "nurses" using the scale and yardstick provided for these measurements (session one and five only).
- Optional: Nurses take patients' temperature and record findings. If thermometers are used they must be sterile to prevent the spreading of germs and caution must be taken to prevent any accidents.
- Number of pulse beats per minute is recorded in next block
- Patients run 100 time in place, nurses take and record pulse readings.
- Patients tell nurses what they had for lunch, estimating quantities. Nurses record the items, quantities, and number of calories per item on side 2 of the health record. The total number of calories is recorded in the space provided on side one.
- Brief statements are written in the "comments" block, noting how patients look to the nurses and how they say they feel, for example, "feels warm, is tired all the time, has a headache."

On day 5, the nurses take the patient's weightagain and average blocks 1,2,3,4 on the health records and comment on overall general health for the week. Nurses may graph the pulse readings to show the difference between a normal and an active pulse rate.

To explore what a researcher would do with this data, various comparisons are made by the class and conclusions drawn.

- List the different hair colors on the chalkboard-–brown, red, blond, black. A count is taken of each hair color. Students determine which hair color is dominant in their class.

- Follow the same procedure for eye color as for hair color.
- List height, weight separately for boys and girls on the chalkboard. Students average height and weight for each sex and draw any relevant conclusions; for example, you might find girls in this classroom are taller than boys, but boys weigh more than girls.
- List hair and eye color for different races on the chalkboard. Students determine dominant hair and eye color for each race. Again conclusions are drawn––we might expect to find that most oriental people have dark eyes and black hair.
- Compare average student and adult caloric intake. Can any conclusions be drawn? What does an average meal for a student consist of?
- List normal and active pulse rates for students and adults on the chalkboard. Students average the rates and draw relevant conclusions, such as students in this classroom have faster pulse rates in both categories than adults.

A general discussion follows covering some or all of the issues below.

- What are records used for in hospitals and doctors' offices?
- Why must these records be accurate?
- Do numbers tell us everything? Do we ever have to look at other information too?
- What could happen if a nurse or doctor were to make a mistake?
- Is it important that people do their jobs correctly?
- How many different mathematics operations did we use?
- What do averages tell us?
- Are these findings true for everybody?
- If we were trying to find the average height of 3rd grade students in this town/city/state, what would we do?

Post representative health records and conclusions on a bulletin board.

Useful Prior and Subsequent Activities:

- See Activity #34
- Students can make up an "average" boy and girl for their class from their findings.

Resources: American Hospital Association
840 North Lake Shore Dr.
Chicago, Illinois 60611

American Medical Women's Association
1740 Broadway
New York, N.Y. 10019

Books:

- **Your Hospital, A Modern Miracle,** M. Cosgrove, Dodd, Mead, 79 Madison Ave., New York, New York 10016
- **Doctors and Nurses: What Do They Do?**, C. Greene, Harper and Row Publishers, 49 East 33rd Street, New York, New York 10016

Films:

- "Medical Laboratory Technologists," Encyclopedia Britannica Educational Films, Inc., 425 North Michigan, Chicago, Illinois 60611
- Eye Gate House, Inc., 146-01 Archer Avenue, Jamaica, New York 11435
  - "The Neighborhood Doctor"
  - "The Neighborhood Nurse"

Activity #27

Comments by Teachers and Students after Using the Activity.

Activity #27

HEALTH RECORD

Name: ______________________________

Address: ___________________________

Date of Birth: ______________

Height: ______	eye color: ______
Weight: ______ (Day 1)	hair color: ______
______ (Day 5)	

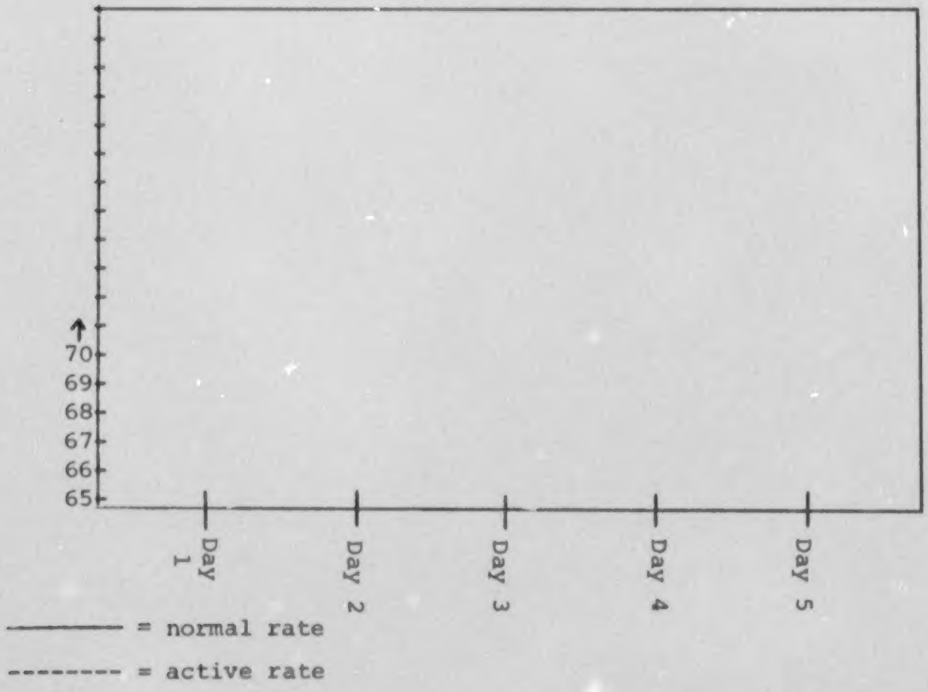
	Day 1 Date: Time:	Day 2 Date: Time:	Day 3 Date: Time:	Day 4 Date: Time:	Day 5 Date: Time:	Average
1. Temperature (optional)						
2. Pulse-normal						
3. Pulse-active						
4. Calories						
5. Comments						

Side 1

LUNCH CHART

	Quantity	Item	Calories		Quantity	Item	Calories
Day 1				Day 2			
Day 3				Day 4			
Day 5							

Pulse Rate Chart
(normal & active)



Side 2

Activity #28

Subject Area:
Mathematics

SOLVING JOB PROBLEMS

OCCUPATIONAL FOCUS:

- Political and Appointive Offices
- Controller
- Homemaker

MATHEMATICS RELEVANCE:

- Addition
- Subtraction
- Multiplication
- Word Problems

Capsule Activity Description:

Students are given budgeting problems to solve and defend.

Teaching Prerequisites:

materials: paper, pencils
contacts with community: none
approximate preparation time: 1 hour
approximate class time: 30 minutes per problem

Mathematics Objectives:

to reinforce addition, subtraction and multiplication skills.

ACTIVITY

Students are given budgeting problems, in the form of occupational tasks, to solve and defend to the best of their ability. The activity can be done individually or in pairs, in class during free mathematics time or as a homework assignment. It can be used to:

- build upon and reinforce basic mathematics skills; and
- provide practical application of these skills.

By adding other problems to the ones already provided here, you can expand its relevance to many more occupations and mathematics skills.

Activity #28

Give students who have finished their work early a problem to solve. The problems are solved by balancing a budget. Allow students as much time as needed to arrive at an appropriate answer.

Work on the problem can be spread over several class periods, or, as mentioned above, assigned as homework.

After the problem has been worked out it is to be presented to the class. Items left in the budget are to be defended and reasons stated for those items removed. For example, in problem #3 the homemaker decides that in order to balance his or her budget, the family will not have any entertainment this month – the reasoning being that Peter needs a pair of sneakers more than the family needs the movies. You and the class act as devil's advocates during the presentation.

The presentation follows the format outlined below.

- The original budget is written on the chalkboard.
- The new budget is written next to it.
- The new total must match the funds allocated for the budget.
- The budget is read aloud and defended.
- At the conclusion of the presentation questions and/or comments are taken from the class acting as town council, board of directors, or family members.
- Students respond to these questions and comments in light of their budgets.
- The budget is then voted on and accepted or rejected.
- If the budget is rejected, give the same problem to another student(s) to try to solve in an acceptable manner.

After each presentation the class discusses various aspects of the budgeting process. Sample questions follow.

- Have you ever wanted to buy more than you can spend? What did you do? Why?
- If your parents were to spend too much money on medical bills in one month would something else have to be cut out of the budget? What would happen if they had to cut down on groceries for a month? How would you feel if the food ran out and there was no more money to buy groceries?
- How do you decide what is important in a budget and what can be left out?
- What might happen to someone in a job if he or she incorrectly calculated the budget?
- If you were to hire someone to balance a budget, what kind of person would you look for to fill the position?

Useful Prior and Subsequent Activities:

- If students get an allowance they can balance their own budgets for one month.
- Students can be given a yearly family income ($10,000), working in family groups they budget the money monthly (see **Learning Magazine,** April, 1975).
- Students can study taxation—how and why it is done, and what is taxed. If a parent is employed as an accountant or by the Internal Revenue Service, invite him or her to class to describe the job and why taxes are necessary.

- Students can be asked to devise a budget for a family on welfare.
- You can invite an insurance company representative (preferably a parent) to class to explain his or her job and how payments are calculated in a robbery situation. Students are given a problem where all their belongings from their bedroom have been stolen. They estimate the cost of lost property, calculate what they will recoup from the insurance company and devise a budget for replacing their belongings.

Resources:

- Local school budget
- Movie: "Blue Dashiki"

Comments From Teachers and Students After Using the Activity:

Activity #28

ROLE PLAYS

1. Mayor

You are the Mayor of Centerville, a small town in the Midwest. You have to make sure the town is going to have enough money next year to pay its bills. You already know there won't be enough money to pay those bills so you will either have to raise taxes or cut some things out of the budget. The people of Centerville don't have very much money so raising taxes is not a good idea. Instead you will have to cut some items from the budget.

Here are the items in the budget and how much they cost (sometimes you will have to figure out the total cost for the items). You can spend $120,000. Figure out what you can cut from the budget to make it balance. You do not always have to cut out a **whole** item. Remember, you will have to define your budget before the city council (the class) so you need good reasons why you leave things in and why you cut things out of your budget.

Town Budget

Schools

1 principal's salary	$12,000
2 teachers' salaries ($8,000 each)	16,000
1 janitor's salary	4,000
55 students, (it costs $40 to provide each student with books and supplies)	______
Utilities (heat, phone, electricity)	1,000

Department of Public Works

road maintenance	7,000
snow plowing	4,000
water maintenance	1,000
garbage pickup	4,000

Police Department

2 police officers' salaries (each makes $9,000)	______
maintenance of one police car (gas, checkups, insurance)	1,500
2 switchboard operators' salaries (each makes $4,000)	______
utilities	1,000

Fire Department

2 firefighters' salaries (each makes $8,000)	16,000
maintenance of 2 fire engines	4,000
pay for volunteer fire fighters (there are 10 volunteers; there are approximately 20 fires every year; each voluntary fire fighter gets $5 per fire	______

Parks & Recreation

2 summer counselors' salaries	$1,200
new equipment	1,800
park maintenance (2 life guards at pond, $500 each)	1,000

Mayor's Office

1 secretary	7,000
Mayor's salary	15,000
supplies	400
utilities	700

TOTAL: $127,800

2. Company Controller

This may be a small company, but every year it seems to get harder to come up with a budget to fit the amount of money the company can spend. It is very hard to cut out items in your budget when they are all so important.

The president of the company has insisted that you cannot spend over $225,000 or the company might have to close down.

Here are the items in the budget and how much they cost (sometimes you will have to figure out the total cost for the items). Figure out what you can cut from the budget to make it balance. You do not always have to cut out a whole item. Remember you will have to defend your budget before the board of directors (the class) so have a good reason why you leave things in and why you cut things out of your budget.

Company Budget

Salaries

15 employees in all	
10 earn $10,000 per year	$
4 earn $18,000 per year	
1 earns $25,000 per year	25,000

Employee Benefits

insurance	
it costs $100 for each employee	1,500
coffee	700
one turkey for each employee at Christmas	
each turkey costs $10	150

New Furniture

1 desk for President	1,000
1 chair for each worker	
(1 chair costs $40)	600
Furniture for lobby	2,000

Activity #28

New Machinery/Equipment	
5 new machines (each one costs $5,000)	$______
3 machines repaired (3 x $1,000)	______
Utilities	2,000
TOTAL:	$232,950

3. Homemaker

It doesn't seem like you ever have enough money anymore. Every month you run short. Something always comes up –– one of the kids gets sick and has to go to the doctor, the car breaks down and has to be fixed, or its your mother's birthday and you have to buy her a really nice present. If it's not one thing costing money it's another. This month it's going to be different. You are **not** going to run out of money.

You decide to make a list of all your expenses for the month and all the things you have to buy. Then you will try to make all those things fit your budget.

Here are the items in the budget and how much they cost. You can spend $740. Figure out what you cut from the budget to make it balance. You do not always have to cut a whole item. Remember you will have to defend your budget before the whole family (the class) so have a good reason why you leave things in and why you cut things out of your budget.

Family Budget

Food	
$70 per week and there are 4 weeks in a month	$ 280
Rent	200
Utilities	
(heat, electricity and telephone)	65
Entertainment	
movies for 2 children	2
movies for 2 parents	4
Car Payment	75
Car Maintenance	
Tune-up	75
Clothing	
Jane: new shoes	9
new dress (her father promised she could have one)	12
Peter: new sneakers for physical education	7
Father: new gloves, old ones wore out last week	5

Dentist	
Mother: filling fell out	7
Miscellaneous	
Bank loan	50

TOTAL: ($791)

OCCUPATIONAL FOCUS:

- General Career Awareness

MATHEMATICS RELEVANCE:

- Addition
- Subtraction
- Multiplication
- Division
- Fractions
- Time
- Money
- Word Problems

Activity #29

Subject Area:

Mathematics

WINNING AT MATH

Capsule Activity Description:

Students play a team game answering mathematics questions relevant to various occupations.

Teaching Prerequisites:

materials: questions (1 set per team), paper (several sheets per student), pencils, rulers (1 per student), newspaper
contacts with community: none
approximate preparation time: 1-2 hours
approximate class time: 1 class

Mathematics Objectives:

to reinforce basic mathematics skills.

ACTIVITY

This game is a great deal of fun and students enjoy playing it. It can be used to review and strengthen any number of mathematics skills and it is a profitable rainy day, end of week activity. Sample game questions have been provided, all focus on the use of mathematics in various careers.

The activity can be used at any grade level, depending only on the nature of the questions. It encourages participation of all students by requiring each one to submit answers to the questions. The activity tends to create noise, so use it accordingly.

The object of the game is to answer all the questions correctly in the shortest amount of time.

Activity #29

Procedure:

- Divide the class into teams of 4-6 members.
- Situate them on the floor in various parts of the room.
- Each team elects a team captain and chooses a team name.
- Distribute paper to the teams——students bring pencil and ruler with them.
- You sit at the head of the room with a set of questions for each team. The questions in each set are in different orders so that teams will not be working on the same problems at the same time, thus eliminating confusion.
- The team captains come forward, take their first question, and return to their teams.
- The captain quietly reads the question aloud to the team and they all start to work on it. When the team gets an answer it is written on a piece of paper. All team member worksheets are turned in with the answer. Everyone must complete all problems. Students may be helped by other team members.
- The captain brings forward the answer, takes next question, and goes back to his team.
- The game continues on until all the teams have answered all the questions.
- The team answering the most questions correctly in the least amount of time wins.

Prior and Subsequent Useful Activities: Students can make up their own game questions.

Resources:

Books:
- *Occupational Information,* R. Hoppock, McGraw-Hill, 330 West 42nd St., New York, New York 10036
- *Encyclopedia of Careers and Vocational Guidance,* Vols. I & II, William & Hopke, Doubleday, Garden City, New York 11530

Comments from Teachers and Students After Using the Activity:

Activity #29

THINGS TO DO

1. Here is some newspaper. Make a captain's hat from it and write your team name on its side. Your captain wears the hat throughout the game and passes it in with the answer to your last question.
2. You are Nurse Rogers, head of Floor 7 in City Hospital. It is time to take your patient's pulse.
3. You are an architect. You have to draw some plans for a new school.

   Using this room as a model, draw it to scale. 1/4" = 1'
   To get the dimensions of the room one student in the group walks off one side and another student the other side. 1 pace = 1'

   Each student draws the room, indicating windows, doors, chalkboards, and desks.
4. You are a navigator for a big airline. You told your family you would be home (Atlanta, Georgia) tonight, but plans have changed. You haven't been able to call home so you decide to send a telegram.

   > I'm in Chicago. Won't be home tonight. Will leave here at 10 a.m. tomorrow and fly (non-stop) to Seattle, Washington. Arrive there at 12 noon their time. Leave Seattle tomorrow at 3 p.m. and arrive home at midnight. Pick me up at the airport."

   How many hours did it take to fly from Chicago to Seattle, Seattle to Atlanta?

   answers: Chicago to Seattle –– 4 hours
   Seattle to Atlanta –– 6 hours
5. This is your first day as a teller at Big Money Bank and Trust. Things went well –– not one hold up at your window. Now you have to "close-out" for the day to make sure you have the correct amount of money in your drawer.

   The computer says you should have $4,699.19 at the end of the day. Check to see if you are right. If you are off, find out by how much– – work in pairs.

   (1) This morning you started with:
   150-1 dollar bills ________
   50-5 dollar bills ________
   50-10 dollar bills ________
   30-20 dollar bills ________
   1-50 dollar bill ________
   Total $ ________

   Now you have:

   (2) 5 checks: $1,492.17
   211.54
   8.19
   31.29
   421.00
   Total: $ ________

   (3) Cash: 315-1 dollar bills ________
   112-5 dollar bills ________
   101-10 dollar bills ________
   30-20 dollar bills ________
   1-50 dollar bill ________
   Total: $ ________

   (4) Total checks and cash: $ ________

Activity #29

Answers:

(1) $1550.00
(2) $2164.19
(3) $2535.00
(4) $4699.19

You close out to the penny. Good work.

6. You own the pizza shop in town and if you do say so yourself, you make pretty good pizza. You just got a call ordering pizza for the Robert's party tonight. They are having 35 people and everybody is to get 2 pieces of pizza. You get 6 pieces from one pizza. How many whole pizza's do you make for the Roberts so that there will be enough for the party? Clue: Round off to largest number. Answer: 12

   The pizza's cost $2.35 each. How much money will the Roberts give you?

   Answer: $28.20

7. You are the head chef for the biggest and best restaurant in town. There is a special party tonight and you are going to make your extra special chocolate pudding. It's a big party so you have to triple the recipe.

   The recipe is written below. How much of each ingredient will you need if you make three times as much (work in pairs).

1 cup sugar	OR:	.24 liters sugar
1 egg		1 egg
1 cup milk		.24 liters milk
1 tablespoon melted butter		15 milliliters melted butter
1½ ozs. melted chocolate		42 grams melted chocolate
1½ cups flour		.36 liters flour
¼ teaspoon salt		1.25 milliliters salt
1½ teaspoons baking powder		7.5 milliliters baking powder
½ teaspoon vanilla		2.5 milliliters vanilla

8. You are a truck driver for the "Everything but the Kitchen Sink" Moving Company. Your headquarters are in Denver, Colorado. Monday you are leaving for Chicago with a truck load of furniture. You should arrive there Tuesday night. Wednesday morning you pick up more furniture and head off for Washington, D.C. You will be expected to arrive in Washington late that same night. Thursday the truck is to be unloaded and you will take on two grand pianos for delivery to Boston. You leave for Boston early Friday morning, scheduled to arrive there in the afternoon.

   The company has given you $275 for gas and emergencies, plus your daily company allowance of $15 per day. Before you leave you better check to see that the company gave you enough money.

(1) How much money will you spend on gas between Denver and Boston?

Denver to Chicago	1050 miles or 1680 kilometers
Chicago to Washington, D.C.	725 miles or 1160 kilometers

Washington, D.C. to Boston	450 miles or 720 kilometers

Your truck gets 6 miles or 9.6 kilometers to a gallon of gas. Gas costs 55¢ a gallon.

Answer: $203.95

(2) You're wondering how many times you will have to stop to fill your gas tank along the way. You know it holds 50 gallons of gas. Remember: you get 6 miles or 9.6 kilometers to a gallon of gas.

Answer: 8 times

(3) If the company gives you $15 per day personal spending money, how much do you have to spend on the whole trip?

Answer: $75

(4) How much money do you have for emergencies?

Answer: $71.05

OCCUPATIONAL FOCUS:

- General Career Awareness
- Pollster

MATHEMATICS RELEVANCE:

- Use of Mathematics in Everyday Life
- Basic Mathematics Skills

Activity #30

Subject Area:

Mathematics

MATH ON THE JOB

Capsule Activity Description:

Students survey parents and neighbors and make observations on the use of math in occupations in their community.

Teaching Prerequisites:

materials: copies of surveys
contacts with community: student-made contacts
approximate preparation time: 1-2 hours
approximate class time: 2-3 classes

Mathematics Objectives:

to become aware of the relevance of mathematics to real-life situations;
to develop skills in gathering and organizing data.

ACTIVITY

This activity can be integrated into your curriculum to introduce students to the many and varied occupations that encompass some form of mathematics skills and operations. It also gives practice in gathering and evaluating data and displaying it in chart or graph form.

The class conducts 2 kinds of surveys––interview and observation––to gather information on the use of mathematics in local occupations. A questionnaire is designed for use in interviewing parents, relatives, or neighbors; an observation sheet is developed for use in observing people working at various jobs in the community.

Activity #30

Discuss with the class the difference between the two survey instruments. Point out that in one case the students ask questions and get answers. In the other case the students are only able to infer answers to questions from actions they observe. In both instances the students try to obtain as much information as possible. Sample items to be included in the questionnaire and observation sheet follow. These items are put on the chalkboard so students can refer to them while designing their own survey instruments.

Questionnaire

- Occupation of the person interviewed
- Place of work
- What does person do on job?
- Does person use mathematics?
- What kind of mathematics skills, operations or problems does he or she use?
  - addition, subtraction, multiplication, division, other
- Did the person need special training for his job?
- Does he or she like the job?

Observation Sheet

- Occupation observed
- Place where work was taking place
- What was person doing on the job?
- Did he or she use mathematics?
- Did it seem to play a large or important part in the job?
- What kind of mathematics was used?
  - addition, subtraction, multiplication, division, other
- Did the person seem to like his or her job?

Divide the class into four groups for the purpose of brainstorming for questions for the survey instruments. Each group appoints a chairperson to direct the discussion and a scribe to record the questions. Two groups are selected to design the questionnaire and two groups to design the observation sheet. Allow 10-15 minutes for the brainstorming (or an amount of time appropriate to your students' abilities.

At the end of the brainstorming period the group scribes read aloud their group's questions which are written on the chalkboard––the questionnaire on one side and the observation sheet on the other. The class decides on the best questions or items for each instrument.

Duplicate and distribute 2 copies of the questionnaire and one copy of the observation sheet to each student. Allow the class a sufficient amount of time to complete the surveys. Parents, relatives and neighbors are interviewed using the questionnaire, and a community worker is used to fill in the observation sheet (waitress, gas station attendant, librarian). Remember: homemaker should not be be overlooked as an occupation.

This activity requires a certain amount of sensitivity to students' and parents' feelings about their jobs, family life, and lack of work or family life. For example, students whose parents are unemployed or deceased may be embarrassed and confused by the activity if you routinely assume every student has an employed parent. One way to avoid such problems is to make clear from the beginning that students do not have to interview an employed parent, but can also interview an employed relative or neighbor or interview a parent who may not be currently employed but who has held one or more jobs in the past. You can also attempt to ensure the anonymity of the questionnaires by having students turn them in to you, without their names on them, and retyping them so that there is no handwriting by which other students can guess at the family involved.

As the surveys are completed, students take turns reading various ones so that the class can get an idea of how the results are coming in. Discussion follows the reading of the sample surveys. Each session has a different focus:

- Why is training important to these jobs?
- What would you do if you were an employee and made a mistake in your work?
- Do any of these jobs we heard about today appeal to you? Why?
- Why is it important to do a good job?

Prior to the survey due date make a large retrieval chart similar to the one attached. If desired, this can be a project for several students. When the surveys are completed, gather the information onto the chart. Students have their surveys on their desks in front of them——parent/relative/community worker——in that order, left to right——to aid them in quickly finding the responses and observation notes.

- Proceed across the chart starting with the parent survey.
- Students indicate a positive response by raising their hand. The number of raised hands is put in the appropriate box.
- All the occupations interviewed and observed are listed on the chart in the far right column.

When the retrieval chart has been filled in, discuss:

- Compare the number of people who use mathematics in their work to the total number surveyed. Do the numbers tell you anything?
- Judging from our survey, is there a need to study mathematics in school? Why?
- What kind of people were surveyed —— white collar/blue collar? Which type of worker is more apt to use mathematics in his or her work? Why?
- How many people seemed to like their jobs? What does this number tell you?

Useful Prior and Subsequent Activities:

- Students can write up their own daily activity charts, highlighting the activities where some form of mathematics is used.
- Students can graph answers to survey questions, indicating percentages and trends.
- Students can write a "Who Needs Mathematics Anyway" book, listing occupations that do **not** use mathematics or show ways you could do a certain job without using mathematics.

Resources:

Books:

- *Occupational Information,* R. Hoppock, McGraw-Hill, 330 West 42nd Street, New York, New York 10036
- *Encyclopedia of Careers and Vocational Guidance,* Volumes I and II, William E. Hopke, Doubleday, Garden City, New York 11530

Activity #30

Comments from Teachers and Students after Using the Activity:

OBSERVATION SHEET

1. Occupation being observed:

2. Location:

3. What is the person doing on his or her job? (be specific)

4. Did he use any mathematics skills? yes ________ no ________

5. Did it seem to play a large or important part in the job?
yes ________ no ________
why?

6. What kind of mathematics skills were used?

addition ________

subtraction ________

multiplication ________

division ________

other ____________________________________
(specify if possible)

7. Did the person seem to like his or her job?
why?/why not?

8. Do you think the person is doing a good job?

9. Would you like to have a similar job? Why or why not?

Activity #30

QUESTIONNAIRE

1. Name:

2. Occupation:

3. Place of Business:

4. Describe your job duties –– be specific:

5. Do you ever use mathematics skills in your work? yes _____ no _____

6. If yes, how and to what extent?

7. What kind of mathematics skills do you use?

   addition _______
   subtraction _______
   multiplication _______
   division _______
   other ___________________________
   (specify if possible)

8. Did you need special training for this job?

9. Did you need any training in mathematics for this job?

10. If you were to make a mistake in the mathematics in your job and the boss found out, would you be in trouble? Why?

11. Do you like your job? Why or why not?

12. If you could do something else what would it be?

RETRIEVAL CHART

				Type of Mathematics Skills Used						
	# who use math in job	# who use math a great deal	# jobs that require training	Addition	Subtraction	Multiplication	Division	Other	# who like or seem to like their job	List of Occupations Interviewed and Observed that use mathematics
Parents N =										
Relatives/ Neighbors N =										
Observations N =										

(N=number of surveys completed for each of the 3 categories - should be equal to the number of students in your room.)

Section Four: SCIENCE

1. ACTIVITIES SUMMARY

This section of the manual contains the following ten activities, sequenced very generally from easiest to most difficult.

31.* **CLASSIFY, CATEGORIZE, AND ORDER:** Students discover use of classification in everyday situations.

32. **JOB AID:** Students learn first aid techniques.

33. **ROLL IT:** Class takes a field trip to observe the extensive use of "wheels" in the community.

34. **CALORIES COUNT:** Students evaluate their eating habits and plan well balanced meals.

35. **WEATHERING THE STORM:** Class visits a farm to learn how people cope with weather conditions.

36. **PHYSICAL FITNESS:** Health professionals discuss their occupations with the class; students relate this information to health problems.

37. **THE ELECTRIC COMPANY:** Students survey their neighborhoods, homes, and school to assess the impact of electricity.

38. **PLANT A TREE, SAVE A TREE:** Class learns about the use and care of natural resources, then deals with community landscape problems.

39. **PROBLEM SOLVERS:** Students are given a community or public problem to solve.

40. **EARTH, AIR, AND WATER:** In groups the class writes to various agencies and organizations to gather information on pollution and then applies it to the community.

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*The activities in this section of the manual begin with number 31 because the numbering continues sequentially after the last activity (number 30) of the previous section of Mathematics activities.

2. INTRODUCTION

As an elementary level science teacher, you should consider career education as an integral and appropriate component of your teaching which will **increase your student's ability and motivation to learn science content and skills.** Moreover, you are in a good position to integrate career education activities into your curriculum because you teach a variety of topics under the general rubric of science, including biology, earth science, chemistry, physics, and mechanics. Because of the variety of science topics you teach, you will have no difficulty identifying appropriate points of entrance in your courses for introducing career education activities **which will complement and further your science objectives.**

How will the integration of career education activities into your science curriculum help you achieve your subject area objectives? There are at least two answers to this critical question.

1. While engaging in the career education activities provided in this manual, your students will, by the very act of learning about career opportunities and roles, learn a great deal about science **topics** related to the career or occupation they are studying. For example, if students interview people whose careers relate to wood (forestry, carpentry, lumber, etc.), the students are also going to learn a great deal about earth elements and plant life (earth science/biology). In short, learning about careers in science automatically involves learning about science **subject matter.**

2. By including career education activities in your curriculum, you will increase your students **motivation** to study and learn about science topics and develop related skills. By studying careers in exciting action-oriented ways, students will be stimulated to delve further into science problems related to the occupations they are studying. For example, students who are studying the effects of the weather by interviewing a farmer will probably want to learn more about what causes the weather and how it is predicted. In this manner career topics have the attractiveness of **"relevance"** for studying and learning science content matter and skills. Activities dealing with concrete, current occupations of personal concern to your students can add motivation to the disaffected, as well as involved students who want to know what science has to do with the world of an adult. By including career education activities in science, you bring the world outside the classroom inside. School, and science in particular, become more in tune with the world and better able to prepare the student for it.

How can integration of career education with science operate in practice? Let's look briefly at a hypothetical Sample Week's Lesson Plans to see how integrating career education activities into your curriculum furthers your own science teaching objectives.

3. SAMPLE WEEK'S LESSON PLANS

The Sample Week's Lesson Plans on the following page could be included in a science unit on the wheel. The lesson plans presume that the class is well along in the unit, has explored different kinds of wheels, is able to easily recognize them, and understands their varied uses.

You have reached the point in the unit where you are to discuss with the class the importance of the wheel to the community. To meet your objective you have decided to integrate a career education activity (Activity #33) which explores the wheel's widespread use into the week's lesson plans. By taking a field trip to a local airport you have given your students an opportunity to familiarize themselves with various careers in one field of transportation, thereby achieving a **career education objective,** but at the same time, they have observed and learned many uses of the wheel, a **science objective.**

You may wish or need to revise this and other career education activities to meet the needs of your class to more appropriately fit into your science plans. Keep in mind, however, that no matter how this activity is used or revised, the essential goal should not be lost or overlooked: to help your students become aware of the various career paths open to them, what is required and involved in different occupations, and the relevance of school to life both now and later.

SAMPLE WEEK'S LESSON PLANS

(An illustration of one way to integrate a career education activity into your course.)

HOMEWORK ASSIGNMENT	DESCRIPTION OF CLASS ACTIVITY	
Students make list of people they see on their way home from school who use wheels.	• Students review the things they and their families use everyday that have wheels and discuss how they help them. • In groups the students brainstorm for other things that have wheels. • These items are listed on the blackboard. The students associate a worker with each one.	Day 1
	• Class discusses how wheels help people (use lists from brainstorming and homework). • Inform students of field trip to airport. Discuss why wheels are important to an airport. • Instruct students they will be required to keep a list of all the things with wheels that they see on the way to the airport and while there, and the workers who use them. • Students review class field trip rules.	Day 2
	• Class takes trip to airport to observe workers and their use of wheels on the job. (Activity #33) • In groups, students compile list.	Day 3
Students cut out pictures from old magazines of people using wheels.	• Based on their lists of workers using wheels, the students draw directions to the airport. • Students role play their directions, acting as "workers" and "friend".	Day 4
	• To conclude activity class discusses what has been learned about the wheel and it uses. • Students make large collage in shape of an airplane from pictures drawn or cut from magazines of various uses of the wheel.	Day 5

4. CROSS REFERENCE

The cross reference below identifies by number activities which treat particular occupational issues and jobs (listed across the top of the page) and activities which reinforce specific science topics and skills (listed down the left-hand margin of the page). By using the reference, you can locate activities by specific jobs or occupational issues which you may want to teach or by particular science topics and skills which you feel are relevant points in your curriculum at which to introduce a study of careers.

CROSS REFERENCE

OCCUPATIONAL FOCUS / TOPIC OR SKILL	Airline Industry	Chef	Dentist	Dietician	Doctor	Ecologist	Environmental Protection	Farmer	Firefighter	Fishing Industry	Forest Ranger	Gardener	General Career Awareness	Homemaker	Landscape Architect	Medical Paraprofessional	Meteorologist	Nurse	Nurse's Aid	Park Commissioner	Physical Education Teacher	Physical Therapist	Police Officer	Pollster	Red Cross Volunteer	Researcher	Tourism	Transportation
Biology			36	36	36		40		32				39			32		32 36	32		36	36	32	39	32	39		
Chemistry				34									39											39		39		
Classification													31															
Conservation						38		38			38	38			38					38								
Earth Science	35					38	40	35 38		35	38	38			38		35			38							35	
Ecology						38	40	38			38	38	39		38					38				39		39		
Electricity													37															
Energy																												33
Health			36	34 36	36				32				39			32		32 36	32		36	36	32	39	32	39		
Human Body			36	36	36				32							32		32 36	32		36	36	32		32			
Nutrition													39											39		39		
Transportation																												33
Weather	35							35		35							35										35	
Wheel																												33

OCCUPATIONAL FOCUS:

- General Career Awareness
  - Grocer, Florist, Restaurant Manager, Farmer, Librarian, Department Store Manager

SCIENCE RELEVANCE:

- Classification

Activity #31

Subject Area:

Science

CLASSIFY, CATEGORIZE, AND ORDER

Capsule Activity Description:

Students discover use of classification in everyday situations.

Teaching Prerequisites:

materials: lined paper, envelopes, construction or mural paper, surveys
contacts with community: visits to community businesses (see text)
approximate preparation time: 1-2 hours
approximate class time: 2-3 classes

Science Objective:

to develop an understanding of classification and how it is used.

ACTIVITY

This activity can be used in a unit on classification or grouping. It can be implemented as an introductory or culminating exercise. In either case students transfer knowledge from the working world to the scientific world or vice versa, to gain a better understanding of the concept of classification and why it is used.

Many, if not all, workers classify the things they work with. The grocer classifies the canned goods, fresh vegetables, and meat; the cook arranges his or her kitchen so the pots and pans, baking ingredients and small utensils are easily available; the farmer grows his crops in one or several fields, the animals graze in another, and tools are stored together. These people put the things they work with into functional groupings.

Activity #31

Choose three or four occupations in your community or school that display the obvious use of classification.

- Grocer
- School Cook
- Librarian
- Farmer
- Department Store Manager
- Florist

Divide the class into an equal number of groups and assign each an occupation. Individually, the groups visit the occupation they are studying.

Contact businesses where these workers are employed to arrange a date and time for the group field trips. Parents and school administrators can be on field trips, see the chapter on "Liaison" in the "Resources" section at the end of the manual.) Plan the trips so they fall within a one week period so as not to draw out the activity over too long a time. The trips can be taken during school time if a substitute can be provided to cover your class. Otherwise, the trips probably will have to be taken after school.

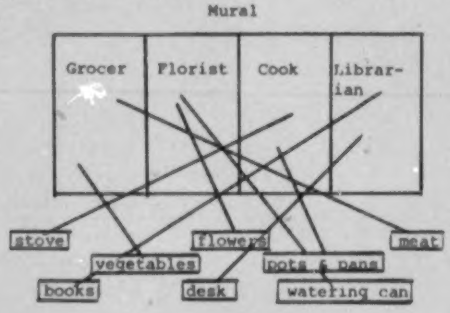
Prior to the trip discuss the need for students to ask good questions of the person being interviewed. Good student questioning techniques will provide the class with relevant information about these workers and the way they utilize classification. As a class brainstorm for questions. The best ones are chosen for inclusion in the class survey. Each group gets a copy of the survey to use during their interview. For further ideas on developing questionnaires, see the section on "Polls" in the "Effective Teaching Methods" chapter in the "Resources" section at the end of the manual.

Assign students one or more questions to ask the worker during the interview. You or the student records the answers on the survey sheet. If you have a tape recorder available, consider taking it with you on the interview. Students can then record their own answers no matter what their writing level.

Before going on the field trips, groups "pilot test" their surveys with you acting as the interviewee. This allows for students to practice asking questions and to make sure that the questions are clear.

After the trips groups draw a mural depicting the people they interviewed with the things they classify. When the mural has been completed, it is hung on the bulletin board. The groups report their findings to the class in the form of a skit.

Finally, each group makes up a word list of things their workers use on the job. Letters are drawn or cut from newspapers or magazines and pasted onto paper to form the words. All the words are placed under the mural in jumbled fashion with strings attached to them. As a class students categorize the words according to their use in an occupation by running the string from the word to the correct occupation. This exercise can also be done by individual students in their free time as long as the strings are not secured permanently at both ends.



Discuss with the class some of the following issues:

- Why is it helpful to classify things?
- What would happen if a grocer did not classify his goods?
- Do you think most workers classify the things they work with?

Useful Prior and Subsequent Activities: Students can classify the contents of their desks and/or classroom.

Resources:

Books:
- *Let's Eat Out,* John Jones, Melmont Publishers, Inc., 1224 West Van Buren St., Chicago, Illinois 60607
- *I Want to Be a Storekeeper,* Carla Greene, Children's Press, 1224 West Van Buren St., Chicago, Illinois 60607
- *Let's Go to the Supermarket,* J.M. Goodspeed, Putnam, 200 Madison Avenue, New York, New York 10016

Filmstrips:
- "Food Store," **Encyclopedia Britannica Films, Inc.,** 425 North Michigan Avenue, Chicago, Illinois 60611
- Jam Handy, Inc., 2861 East Grand Boulevard, Detroit, Michigan 48211
  - "The Grocer"
  - "Shopping for Groceries"

Comments From Teachers and Students After Using the Activity:

OCCUPATIONAL FOCUS:

- Medical Paraprofessional
- Fire Fighter
- Nurse
- Police Officer
- Red Cross Volunteer
- Nurse's Aid

SCIENCE RELEVANCE:

- Biology
- Health
- Human Body

Activity #32

Subject Area:

Science

JOB AID

Capsule Activity Description:

Students learn first aid techniques.

Teaching Prerequisites:

materials: none
contacts with community: invite Red Cross volunteer or school nurse to class as a guest speaker
approximate preparation time: 1-2 hours
approximate class time: 2-3 classes

Science Objectives:

to learn the importance and techniques of first aid necessary in times of emergency bodily injury.

ACTIVITY

This activity has two parts: (1) invite a Red Cross Volunteer or nurse to class to explain how first aid is administered; and (2) role play providing first aid to "injured" and "sick" people.

As a class list as many accidents as you can that require first aid to get them started. Tell the students to think of the times they have needed first aid:

- cuts and bruises
- broken bones
- swimming accidents
- fainting
- frostbite
- choking
- sunburn
- sprains

Activity #32

Invite a Red Cross Volunteer or nurse to talk with the class about his or her job and methods of administering first aid. Request that this person come in work clothes and bring his or her "tools of the trade." The class develops a set of questions to ask the guest speaker. Sample questions follow.

1. Where did you learn first aid?
2. How do people learn to act so calmly and efficiently in emergency situations?
3. How significant a part does first aid play in your job? How often do you have to provide it?
4. Do you find providing first aid makes you nervous, or do you enjoy the excitement of it? Have you ever made a mistake providing first aid? How did you feel afterwards?
5. How much do you have to know about how the body works in order to be able to provide first aid?

To learn various methods of providing first aid the guest speaker can demonstrate to the class:

- artificial respiration
- providing for someone with a broken bone
- stopping the bleeding from a deep cut
- responding to an unconscious person
- inducing vomiting in a poisoning case
- relieving someone who is choking
- treating frostbite
- responding to an epileptic fit
- remedying heat prostration

Students can formulate questions such as the following to ask:

1. When should these techniques be used?
2. Who should use them?
3. What dangers are involved in using them?
4. Where can the average citizen receive training in first aid?
5. What special measures are needed in a disaster like a hurricane, tornado, or flood?

Finally, students formulate questions designed to reveal the biological issues and processes behind the application of first aid. Sample questions include:

1. Why does frostbite occur? Can it be treated and cured?
2. Why do people faint?
3. How much blood can the body afford to lose? Why is blood so necessary?
4. How do broken bones, torn ligaments, sprains, etc. heal?

Following the class visit by the Red Cross Volunteer or nurse, students, using the regular classroom resources in first aid and perhaps with the technical assistance of the school nurse, simulate the proper first aid response to different accidents and illnesses. Small groups of students or students working in pairs can choose an accident and role play for the class, after practice by themselves, the first aid measures that should be employed. Examples of injuries or accidents that can be role played include:

- minor bleeding
- profuse bleeding
- heat prostration

- frostbite
- broken bones
- sprains
- pulled muscles
- vomiting
- migraine
- limb crushed by a heavy object
- poisoning
- skin irritation
- foreign matter in the eye, nose or throat
- choking

Another role play approach is for the teacher to assign role profiles to students who must then, without practice, act them out immediately. This approach is more realistic in terms of replicating the actual mental and physical quickness someone is likely to have to exhibit during an actual medical emergency. Sample role profiles for a lifeguard and two children follow.

Child One

You love to go swimming in the summer. It is really hot today so you and your older brother/sister are at the lake. You have taken 3 lessons so far and you are becoming quite a good swimmer. Maybe you'll just swim right over to that rock where all those other kids play––you're sure it's not as far as it it looks. Oh no, your foot is caught in a weed. Oh, "Help!"

Child Two

You wish you didn't have to take your little brother/sister with you to the beach every time you go. You always have to watch him/her and you never get to have a really good time with the other kids. You'll check on him/her one more time then you'll go in the water. Oh no, something's wrong. Your brother/sister is in trouble!

Lifeguard

The sun is terrific today. Your tan is going to be great by the end of the week. You wish you could just lie back, close your eyes and let the sun do its job. Hey, what's wrong with those two little kids. You better do something quick!

Follow-up discussion after the role plays can center on what first aid techniques were used, whether they were appropriate and the best, how the accident could be prevented or reduced in the future, and how the persons providing the first aid felt while administering it.

Useful Prior and Subsequent Activities:

- Students can set up a first aid awareness program after school. They can teach peers or other students simple first aid skills.
- Students can study occupational health (as opposed to emergency injury/accident) hazards, such as lung disease, cancer, deafness, and blindness.

Activity #32

Resources:

- Students and teachers can refer to the following book:

  First Aid. The American Red Cross, Doubleday and Company Garden City, New York 11530 (New York, 1973). Paperback.

- Students and teachers can write to the following organizations for further information:

American Medical Association
535 North Dearborn Street
Chicago, Illinois 60610

American Red Cross
National Headquarters
17th between D & E Streets, N.W.
Washington, D.C. 20006

U.S. Public Health Service
Office of Public Inquiries
Bethesda, Maryland 20034

Forest Service
U.S. Department of Agriculture
Washington, D.C. 20250

ANA – NLN Nursing Careers Program
American Nurses Association
10 Columbus Circle
New York, New York 10019

Comments From Teachers and Students After Using the Activity:

Activity #33

Subject Area:

Science

ROLL IT

OCCUPATIONAL FOCUS:

- Careers in Transportation
  - Pilot
  - Train Engineer
  - Bus Driver
  - Truck Driver
  - Baggage Clerk
  - Truck Loader

SCIENCE RELEVANCE:

- Wheel
- Transportation
- Energy

Capsule Activity Description:

Class takes a field trip to observe the extensive use of "wheels" in the community.

Teaching Prerequisites:

materials: paper – lined and construction, crayons
contacts with community: visit to an airport, train station, or bus terminal
approximate preparation time: 1-2 hours
approximate class time: 2½-3 classes

Science Objectives

to become aware of the many uses of the wheel and its impact on technology.

ACTIVITY

The wheel is an important part of many of the machines on which our society depends. Many modes of transportation use it, a great many jobs derive from its use and manufacture, and it has made a large number of jobs easier and more efficient. The activity provides students with an opportunity to carry their understanding of the wheel into the world outside the classroom and to observe people using and living with it.

Along with its integration into a unit on the wheel, the activity can be used when studying different modes of transportation as well as when discussing the implications and impact of modern technology on life.

Activity #33

Arrange for a class field trip to a local bus terminal, train station or airport. If a parent is employed in one of these areas, request his or her assistance in setting up and participating in the trip. The school principal or guidance personnel may also be of help to you in contacting the right person at one of these facilities. (For additional information on field trips, see the chapter on "Liaison" in the "Resources" section at the back of the manual.) The trip is to be taken by the students from the point of view of a traveler——observing the workers encountered along the way.

Prior to the trip divide the class into small groups of students for the purpose of brainstorming for "things" that have wheels and are used and seen everyday. Each group elects a scribe to record all the uses of the wheel the group can think of. After the brainstorming session the lists are transferred to the chalkboard. As a class students associate a worker whose job depends on wheels with each use listed. For example:

car —— taxi cab driver
bus —— bus driver
plane —— pilot
bicycle —— bicycle repair person
train —— train conductor
tractor —— farmer
pulley —— painter
lawn mower —— gardener
wheel barrow —— construction worker

On the field trip students, still in their same groups, again perform this exercise. On a piece of paper they list all the different uses of the wheel that they see and the worker using it. You and the chaperones can be of assistance here in identifying unfamiliar workers and wheel uses. The groups start and end their list at the school door. An example of a list drawn up on the way to and at an airport follows.

bus —— bus driver
car —— taxi cab driver
subway —— subway conductor
lawn mower —— airport maintenance crew
cart —— baggage clerk
conveyor belt —— baggage inspector
truck —— baggage loader
plane —— pilot, flight attendant, maintenance crew, ground crew

The duties and responsibilities of the workers are explained to the students as they are spotted.

After the trip students working in their groups draw up and illustrate directions to the airport/bus terminal/train station. These directions are designed as if they were for a friend who does not speak or read English very well. Put a set of criteria on the chalkboard for your students to follow for this exercise.

- The directions start at the school building and end at the door to the plane/bus/train.
- All your landmarks along the way are people you saw working with wheels.
- Draw all the workers your friend will meet or see at the airport/bus/terminal/train station before he or she can start the trip.
- Your directions must be clear——your friend must not miss his or her plane/bus/train.
- Use the list you made on your field trip to guide you.

When the directions are complete, they are role played by the various groups. A student volunteers or is chosen to be the "friend" and is sent out of the room while the stage is set. Members of a group become the workers depicted in the directions and arrange themselves around the room in the order shown in the illustrations. The "friend" is called back into the room, given the directions and sent on his or her way. Each worker helps the "friend" in a way that allows him or her to be identified. Remember, the friend speaks and reads very little English. Role play each set of directions so all the students have an opportunity to take part in the exercise.

At the conclusion of the role plays discuss the following issues:

- How would our lives be different if we didn't have the wheel?
- Do many people depend on the wheel? do your parents, do you?
- What are some of the problems caused by overuse of machines and engines that use the wheel? Whose fault is it?
  - pollution
  - gasoline shortage
  - people not getting enough exercise (the "flabby" American)
- What would a farmer do without a tractor? a gardener without a lawnmower? a construction worker without a wheel barrow? a kid without a bicycle?
- What would the workers we saw at the airport/train station/ bus terminal do without wheels to help them? (pilot, baggage clerk, taxi cab driver, etc.)
- Do people ever think about the things that make their jobs easier? What are some of the things that make your jobs easier as students, compared to kids one hundred years ago?

Useful Prior and Subsequent Activities:

- Students can list as many things as they can that have wheels and what would be an alternative to them if there were no wheel.
- Students can study the history of the wheel and the impact of its introduction on different societies.

Resources:

Pan American World Airways, Inc.
Pan American Building
200 Park Avenue
New York, New York 10017

American Airlines, Inc.
633 Third Avenue
New York, New York 10017

Amtrak
Public Affairs Office
955 L'Enfant Plaza, N.
Washington, D.C.

Greyhound Bus Lines
Greyhound Tower
Phoenix, Arizona 85013

Department of Transportation
Office of Information
400 7th Street, S.W.
Washington, D.C. 20024

Activity #33

Filmstrip:

- "Raw Steel to Rolling Wheels,"
  Educraft Incorporated, 6475 Dubois
  Detroit, Michigan 48211

Pamphlet:

- *Bus and Truck Transportation of Canada,* Paul G. Ingram, Editor,
  McLean-Hunter Publishing Limited,
  481 University Avenue, Toronto 2,
  Canada

Transparencies:

- Ecology Transparencies, Teacher's Guide and Student Workbook, Western Publishing Co., 850 Third Avenue, New York, New York 10022
- Ecology Transparencies, Teacher's Guide and Student Workbook, 111 Barron Avenue, Box 519, Johnston, Pa. 15907

Comments From Teachers and Students After Using the Activity:

OCCUPATIONAL FOCUS:

- Dietician
- Homemaker
- Chef
- Chemist

SCIENCE RELEVANCE:

- Health
- Food
- Chemistry

Activity #34

Subject Area:

Science

CALORIES COUNT

Capsule Activity Description:

Students evaluate their eating habits and plan well balanced meals.

Teaching Prerequisites:

materials needed: chart (2 per student), calorie counters, height/age/calorie chart
contacts with community: visit by school dietician, cafeteria head, or homemaker
approximate preparation time: 30-60 minutes
approximate class time: 4-5 classes

Science Objective:

to understand proper nutrition and the need for well balanced meals.

ACTIVITY

This activity can be integrated into a unit on health when studying the four basic food groups and ways to keep our bodies sound. To find out how they measure up, students keep a record for a week of what they eat each day. The charts are then analyzed and evaluated according to proper nutrition standards.

Inform students that they will be recording their food intake for a period of 3-5 days so that they may analyze their eating habits. In order to do this distribute a chart or have students make their own (see attached sample).

Activity #34

At prescribed times each day during the test period (9:00 a.m., after snack, after lunch), students fill in their charts, listing food items and calories. The calorie count will be an approximation unless quantities are measured. Allow a sufficient amount of time at the 9 a.m. session so that students can record what they ate the night before, as well as for breakfast that morning.

At the end of the test period invite the school dietician, cafeteria worker, or a homemaker (preferably a parent) to class to explain why good eating is essential to a healthy body and how he or she uses the knowledge of good food and health practices in his or her work. The guest then takes several students' charts and evaluates them.

- Is the student eating properly at each meal? Why or why not?
- Which foods are the good ones?
- Which foods, if any, should be eliminated and why are they harmful or of no value? (Emphasis is placed on chemical additives, what they are and what they do.)

The guest answers any questions the students may have about his or her job.

- How did you become a ________________?
- Do you need any special training for your job? If so, what?
- Do you like your work? Why or why not?
- What sort of things do you do on the job?

Each student takes his or her chart and evaluates it. The number of daily calories is compared to the number of calories suggested for a person of his or her age and height. Post a height/age calorie chart for students' convenience. Students comment on their eating habits and make suggestions on how they can be improved.

For homework students look through their parents' cupboards and refrigerator. Using the food available in the house students make up a menu for themselves for a three-day period, including all meals and snacks. A chart similar to the one used for record keeping can be employed in making up the menus.

When the menus are planned, students look over the various items. Choosing at random 4 different menu foods, students check their containers for any "unnatural" additives. The foods are listed on a piece of paper and the additives written in beside them. Those that are "pure" are left blank.

List the foods containing chemicals on the chalkboard. The class discusses why so many foods have chemical additives, what they do to the food, and how they can be avoided (e.g., eating only fresh vegetables and meat, no "junk" foods).

Students calculate the daily calories on their menu plans and compare them to the suggested number of calories for their age. The plan is also checked for the correct distribution of foods from the four major food groups. Students volunteer to present their menus to the class. The students:

- read their menus
- give the number of calories per day, indicating how close the figure is to the recommended number
- tell how the menu can be made more nutritious and balanced.

As a class discuss the following issues.

- Why is it important to have good eating habits and well balanced meals?
- What would happen if you ate only one kind of food?
- Would you find being a dietician an interesting job? Do you think it would be rewarding? Why do you think someone might want to be a dietician?
- Meat is expensive and many people cannot afford it. Knowing what you do, is there a way to have a well-balanced nutritious meal without meat? What are your substitutions?

Prior and Subsequent Useful Activities:

- Students can make up special diet menus:
  - salt free
  - no carbohydrates
  - low in calories (to lose weight)
  - high in calories (to gain weight)

- Students can make a chart of foods high in:
  - calories
  - protein
  - carbohydrates

Resources: You can write to the Department of Agriculture for information on proper nutrition.

Department of Agriculture
Food and Nutrition Service
500 12th Street, S.W.
Washington, D.C.

Comments by Teachers and Students After Using the Activity:

Activity #34

	Monday	Tuesday	Wednesday	Thursday	Friday
Breakfast					
Snack					
Lunch					
Snack					
Dinner					
Snack					
Total Calories					

Comments:

OCCUPATIONAL FOCUS:

- Farmer
- Meteorologist
- Airline Industry
- Fishing Industry
- Tourism

SCIENCE RELEVANCE:

- Weather
- Earth Science
- Centigrade Scale

Activity #35

Subject Area:

Science

WEATHERING THE STORM

Capsule Activity Description:

Class visits a farm to learn how people cope with weather conditions.*

Teaching Prerequisites:

materials: thermometer, wind vane, paper, bucket, barometer (optional)
contacts with community: visit to a farm or some appropriate industry (see below)
approximate preparation time: 1-2 hours
approximate class time: 3-4 classes

Science Objectives:

to better understand the weather, the reasons for predicting it, the ways in which people live with it;
to become aware of the ways in which science helps an industry be more productive.

ACTIVITY

Weather affects all of us. Your students must cope with it because it determines the clothes they wear and the place they play. This activity explores how other people cope with the weather when it affects their work and their livelihood. The activity has two parts: (1) class visits a farm to observe methods used to cope with the weather and (2) students chart the weather for one week and determine how a farmer would have been affected by it.

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*This activity is written based on a trip to a farm but is easily adapted to the industry and/or occupations you have chosen.

Activity #35

Arrange for a class trip to a local farm* or some other local industry that is dependent on the weather (fishing industry, resort areas, airlines). The trip can be set up directly with the people who operate the farm or you can enlist the help of someone you know who is able to make the appropriate contact (parents, school principal, guidance department). If a parent owns a farm, take advantage of this opportunity to visit it.

Request that the farmer discuss the kind of work he or she performs by describing a typical day's events and the effect weather can have on that work. Depending on where you live, some or all of the following conditions brought on by or having to do with the weather are discussed:

- drought
- flood
- the seasons
- growing season
- frost/snow/ice/cold
- hurricanes/winds/tornados
- type of crop grown

Cures and aides for those conditions which have adverse effects on crops are also to be discussed and explained by the farmer.

- irrigation
- fertilizer
- drainage
- green houses
- proper coverage and care of crops in time of frost
- accurate weather forecasting
- good weather

Prior to the trip the class brainstorms for questions to ask the farmer about how he or she copes with the weather and about his or her occupation in general. Some sample questions follow:

1. Are you always able to save your crops even when you know what the weather is going to do?
2. Have you always had ways to help you cope with weather conditions? What did you and other farmers do before you had irrigation systems, green houses, fertilizers, etc.?
3. How many hours a day do you work? What would happen if you didn't put in all those hours?
4. Since farming is such hard work, why do you do it? Was this your family's farm? Did you ever want to do anything else besides farm?
5. What is the best thing about being a farmer?

---

*This activity is written based on a trip to a farm but is easily adapted to the industry and/or occupations you have chosen.

In class, for a period of one week, students, working in pairs, keep their own weather charts similar to the one below.

Date	Sky	Temperature		Moisture Fall	Wind		Comment
		9 a.m.	1 p.m.		Force	Direction	
10/14	Clear	60°F or 16°C	65°F or 18°C	none	Gentle	N	Nice day, sunny, clear

You will need a class thermometer and a windvane. The thermometer can be purchased inexpensively in a hardware store or there may already be one in the school. Students can make their own wind vanes or an anemometer or windvane from a nearby building could be used and observed for the duration of the lesson. If you are making or buying your own, be careful where it is placed, both for safety and accuracy of readings.

At this point students would benefit from a discussion of the Centigrade scale, how to read it, how to convert to it, its relation to Fahrenheit, and the reasons for the United States' forthcoming change to Centigrade.

The temperature is recorded twice––at 9 a.m. and 1 p.m.––to note its range and variation. At the time of the second reading the moisture fall is noted along with the wind force and direction. If there has been a considerable rain or snowfall, measure the amount in the bucket which is placed in a safe, but open spot outside. A comment is then added to the chart about the weather for that day. You may also wish to add barometer readings to this exercise.

At the end of the week, students, pretending to be farmers, make up diary or log entries for a five day period based on their weather recordings. The entries reflect the farmer's daily activities as determined by the weather.

Example:

Day 1. Dear Diary,

> Today was a good day, sun shining, nice breeze. Milked the cows first thing, then put them out to pasture. Planted a field of beans. Time for lunch. In the afternoon I plowed the lower field for corn planting tomorrow. Tractor broke down right before I finished. I spent two hours trying to get it working. Mr. Stevens had to come over after dinner. We finally got it started about 8:00. This turned out to be a very long day. At least the weather stayed good so we could get the tractor out of the field.

Students volunteer to read their weather charts and diaries. Class comments on the completeness and realism of both.

Useful Prior and Subsequent Activities:

- Class can take a field trip to a weather station or invite a meteorologist to class.
- Students can study why different geographical areas have different weather.

Activity #35

Resources:

American Meteorological Society
45 Beacon Street
Boston, Massachusetts 02108

Department of Agriculture
National Agriculture Library
Independence Avenue between
12th and 14th Streets, S.W.
Washington, D.C. 20003

Books:

- *I Want to Be a Dairy Farmer,* Carla Greene, Children's Press, 1224 West Van Buren, Chicago, Illinois 60607
- *Farm and City,* L.S. Mitchell & M.W. Brown, D.C. Heath & Co., 285 Columbus Avenue, Boston, Mass. 02116
- *About Farm Helpers,* Evelyn Payton, Melmount Publishers, Inc., 1224 West Van Buren, Chicago, Illinois 60607

Filmstrips:

- "Life on the Farm," William P. Gottlieb Co., Educational Record Catalog, 157 Chambers St., New York, New York 10009
- "It's the Growing Thing," Educraft Inc., 6475 Dubois, Detroit, Michigan 48211
- "What is Wind," Jam Handy, Inc., 2861 East Grand Boulevard, Detroit, Michigan 48211

Comments From Teachers and Students After Using the Activity:

OCCUPATIONAL FOCUS:

- Careers in Health
  - Doctor, Dietician, Dentist, Nurse, Physical Education Teacher, Physical Therapist

SCIENCE RELEVANCE:

- Biology
- Human Body
- Health

Activity #36

Subject Area:

Science

PHYSICAL FITNESS

Capsule Activity Description:

Health professionals discuss their occupations with the class; students relate this information to health problems.

Teaching Prerequisites:

materials needed: construction paper, scissors, crayons, picture of body (1 per student)
contacts with community: one or several of the following professions visits the class:
school doctor, school dietician, dentist, physical education teacher
approximate preparation time: 1-2 hours
approximate class time: 2-2½ classes

Science Objective:

to better understand the needs of the body and to become aware of its proper care.

ACTIVITY

The purpose of this activity is to acquaint students with various health professions, to make them aware of the services these people provide to the community, and their importance to society. The activity involves students in a question and answer exercise similar to a press conference.

Invite one or more health professionals (doctor, nurse, dietician, dentist, physical education teacher, physical therapist) to class to discuss their professions and the services they provide. Contact any parents who are employed in these occupations for their assistance and participation in the exercise. School personnel—–school nurse, school doctor, physical education teacher—–are also valuable resources for this activity and should be approached for their availability as guest speakers. (For additional information on making contacts see the chapter on "Liaison" in the "Resource" section at the end of the manual). Ask that guest speaker(s) come attired in their normal work clothes and bring their "tools of the trade." The session is run in a manner similar to a press conference.

Prior to the "press conference" the students are given the names of the people on the panel, what each does and the topic that will be discussed: "Who Helps Keep You Fit and How." The topic should be appropriate to the area you and the class are presently studying.

- Students portray a member of the press––radio, television, newspaper, magazine––at the conference. Students make name tags indicating their affiliation; this can be a fictitious or an actual radio/television station, newspaper, etc. The name tags are large enough to be read by the panel members.

PRESS

Jim Peters

Daily Star

- Each student makes up two questions to be directed to specific panel members during the question and answer period which follows the introductory presentations. Spontaneous questions students have may also be asked. Sample questions follow:

  - Do you like your job?
  - What do you do for people?
  - Did you need special training for your job?
  - Did you always want to be a __________?
  - What do you like best, least about your job?
  - Do you have to work hard?
  - If there was something wrong with me, how could you help?

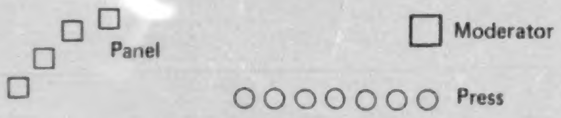
- Either you or a student acts as moderator to introduce the members of the panel. Their names and where they work may be enough.

  The moderator also asks general questions or makes comments to keep the discussion moving lively. All panelists respond to each question from their own point of view.

  - Are you and your skills necessary to the community?
  - Would our bodies stay healthy without you?
  - Are people, today, healthier than ever before?
  - Why are most doctors white and male?
  - Are there any health problems in our community that other communities don't have?
  - What can we, as students, do to keep fit?

To improve the quality of the conference and to make it more beneficial for the students, you may wish to have a short practice session prior to the actual conference using students or other teachers as panelists.

On the day of the conference the room is set up as in the diagram below.



The moderator introduces the panel members. The panelists describe their work using whatever visuals they brought to the conference, and how they help "keep us fit." After the introductory remarks, the moderator begins the open discussion by asking a prepared question. General questions are then taken from the floor. The moderator calls on students individually. When called on, students:

- stand, say their names, the name of their affiliation, and direct their questions to one of the panelists or to the panel in general.

  Example: "Jim Peters, *Daily Star.* Dr. Rossi, why. . ."

The length of the conference is determined by the panelists' schedules and your students'. One period is, however, sufficient time for this portion of the activity.

After the conference the students write up short articles for their newspaper, magazine, or whatever. The articles are based on the questions the students asked the panelists.

Example: "How Ms. Roberts, a physical education teacher, helps us keep fit."

"How Dr. Rossi became a dentist."

Several of the articles are read to the class and all are posted on the bulletin board.

Follow-up the press conference with a discussion.

- Why must be take care of our bodies? Why can we not always do this by ourselves?
- Whom do we see when we have a problem, and what can they do for us?
- What can we do to keep ourselves physically fit?
- Why are so many doctors white males? Can a woman be a doctor? What about a black person or a member of some other minority?
- Are these careers rewarding? Why? What are their advantages and disadvantages?

To reinforce the students' understanding of the help these professionals provide in maintaining good health, pass out a drawing of a body that is not quite physically fit. Label different areas that are having a problem and ask students, working in pairs, to determine who this [illegible] should see for help and the nature of the assistance that will be administered (see attached).

Useful Prior and Subsequent Activities:

- Students can draw up 10 steps to better health.
- The class can hold a physical fitness week by making up healthful activities and exercises.

Resources:

Books:

- *A Visit to the Doctor,* Berger Knute, et. al., Grosset & Dunlap, Inc., 51 Madison Avenue, New York, New York 10010
- *Let's Go to the Dentist,* Naomi Buchheimer, Putnam, 200 Madison Avenue, New York, New York 10016
- *A Visit to the Hospital,* Francine Chase, Grosset & Dunlap, Inc., 51 Madison Avenue, New York, New York 10010

Activity #36

Films:
- Eye Gate House, Inc., 146-01 Archer Avenue, Jamaica, New York 11435
  - "The Neighborhood Doctor"
  - "The Neighborhood Nurse"

For further information write to:

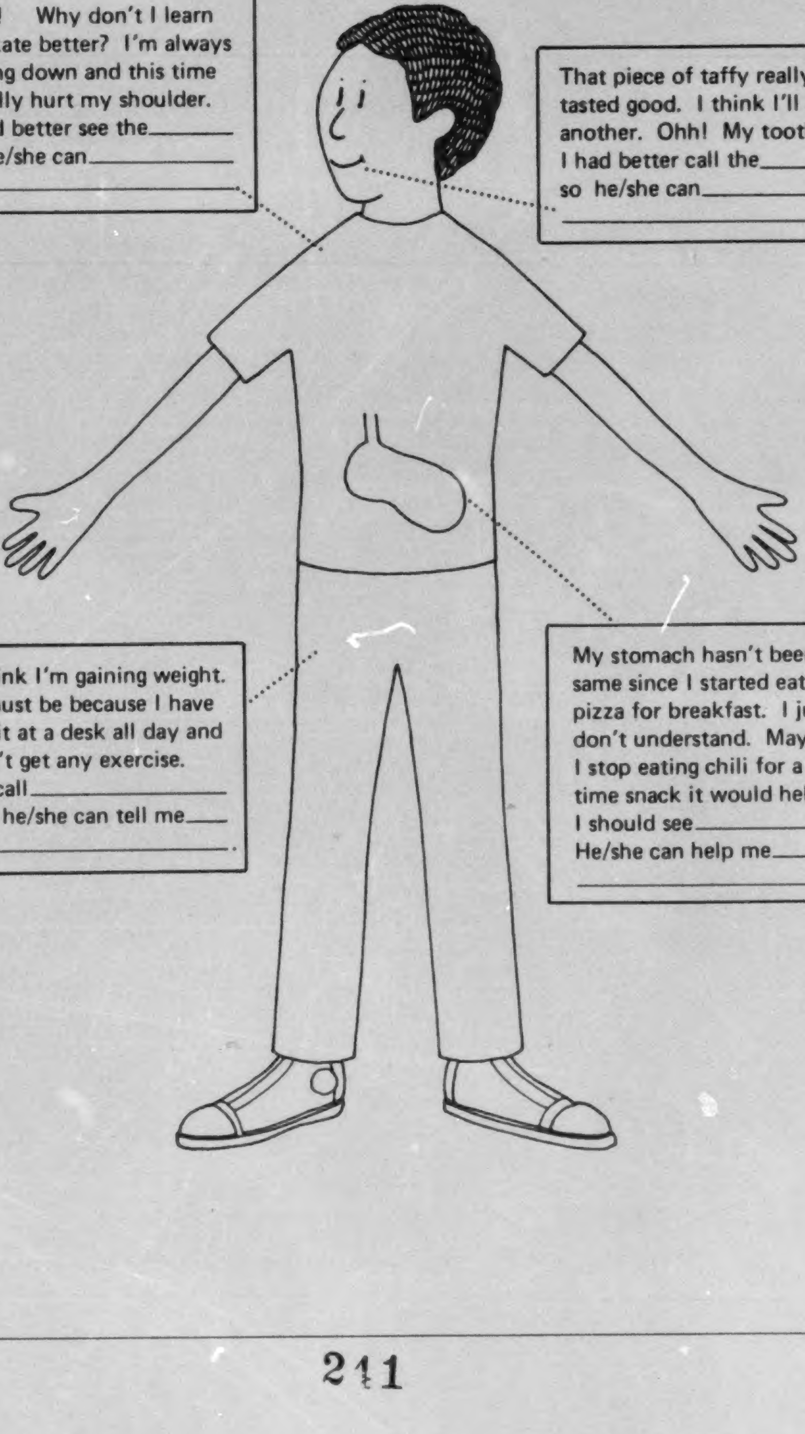
American Medical Association
535 North Dearborn Street
Chicago, Illinois 60610

U.S. Public Health Services
Office of Public Inquiries
Bethesda, Md. 20034

Comments From Teachers and Students After Using the Activity:

Ohh! Why don't I learn to skate better? I'm always falling down and this time I really hurt my shoulder. I had better see the ______ so he/she can ______
______

That piece of taffy really tasted good. I think I'll have another. Ohh! My tooth! I had better call the ______ so he/she can ______
______.



I think I'm gaining weight. It must be because I have to sit at a desk all day and don't get any exercise. I'll call ______ and he/she can tell me ______
______.

My stomach hasn't been the same since I started eating pizza for breakfast. I just don't understand. Maybe if I stop eating chili for a bedtime snack it would help. I should see ______. He/she can help me ______
______.

OCCUPATIONAL FOCUS:

- General Career Awareness

SCIENCE RELEVANCE:

- Electricity

Activity #37

Subject Area:

Science

THE ELECTRIC COMPANY

Capsule Activity Description:

Students survey their neighborhoods, homes, and school to assess the impact of electricity.

Teaching Prerequisites:

materials: surveys (2 per student), lined paper
contacts with community: student-made contacts
approximate preparation time: 1-2 hours
approximate class time: 3-3½ classes

Science Objective:

to become aware of society's dependence on electricity.

ACTIVITY

The purpose of this activity is to develop student awareness of the impact of electricity on society. Students assess the obvious use of electricity in school, at home, and in the community, and determine its importance in the world of work. The activity can be integrated into your curriculum when studying electricity to enhance its significance as a scientific discovery and to explore the ways scientists have put it to use.

Take the class on a tour of the school building to look for things run by electricity. Working in pairs, students keep a list of all the electrical devices they see, their location, and their use. They could make a chart such as the one on the following page.

Activity #37

Electrical Device	Location	Use
1.		
2.		
3.		

Some items found in a school building that are run by electricity are: tape recorders, lights, record players, radios, intercoms, mimeograph machines——many of these are right in your own room. Show the students the wiring leading to the object, and review the principles of electricity involved in making these things operate.

On their way home from school students, using the format above, compile a list of all the things they see that are run by electricity (street lights, stop lights, signs, etc.). They add to this list the electrical devices found in their homes. Make sure your students use caution when looking for these things. Review safety measures that apply to plugs, switches and electricity in general.

List all the items on the chalkboard. Discuss the following with the class.

- What have you discovered about the way in which we use electricity?
  What effect does it have on our lives?
- What would it be like not to have electricity, what would happen? How would people react?
  How would you feel?
- Who invents all the electrical uses? (scientists) Do you think that more things can be invented for our use?

In order to discover just how widespread is our dependence on electricity, students interview parents and neighbors about the use of electricity in their work. Students are to find out as much as they can about the jobs these people hold and the extent of their dependency on electricity to do their work.

This activity requires a certain amount of sensitivity to students' and parents' feelings about their jobs, family life, and lack of work or family life. For example, students whose parents are unemployed or deceased may be embarrassed and confused by the activity if you routinely assume every student has an employed parent. One way to avoid such problems is to make clear from the beginning that students do not have to interview an employed parent, but can also interview an employed relative or neighbor or interview a person who may not be currently employed but who has held one or more jobs in the past.

As a class brainstorm for survey questions. You can suggest a few examples of information the questionnaire can be designed to elicit to start the class thinking. A sample questionnaire that students can use as an example follows.

QUESTIONNAIRE

Name:

Occupation:

Where Employed:

1. What do you do in your work? (State duties)

2. Do you use any electrical devices and/or equipment in your work? List:
   1.
   2.
   3.
   4.

3. How does each of these help you?
   1.
   2
   3.
   4.

4. Would it be difficult for you to work if there were no electricity to run these things? Why?

5. Did you need special training to operate the electrical devices you use on the job?

6. Did you need special training for your job? What kind?

7. Do you like your job? Why?

8. Why did you choose it?

9. Is there anything else you would rather be doing?

Activity #37

For further ideas on developing questionnaires see the section on "Polls" in the "Effective Teaching Methods" chapter in the "Resources" section at the end of the manual.

Duplicate the surveys and distribute two to each student. Before administering the questionnaire each student "pilot tests" it on a classmate to practice asking questions and to make sure that the questions are clear. Then give the students three to five days to complete the interviews.

When all the surveys are completed, students choose one worker interviewed to role play. Another student acts as an electrician, repair person, boss, customer, etc. Sample role plays follow.

A.	Assembly line worker:	This is the second time today the air conditioner has stopped working and this has got to be the hottest day of the year. You are beginning to perspire and it's becoming hard to fit those little screws in place. All the people around you are looking pretty uncomfortable, too.
	Boss:	It seems to be getting warm in here. You'd better check the air conditioner. If it has broken down again you will never get an electrician to come fix it at this time of day. The workers will just have to grin and bear it for the next two hours.
B.	Secretary:	Oh, good, your electric typewriter just broke. You will have to call the repair person to fix it. Maybe you can take a long lunch hour while it is being fixed. Your boss shouldn't mind and anyway, how can you do anything without a typewriter.
	Boss:	You have 15 letters to send out today--you don't know how they'll get to the post office by five p.m. And now your secretary's typewriter is broken. It will probably take all afternoon for a repair person to get here. Maybe you can go home to get your manual typewriter for her to use.
C.	Sales Clerk:	One more sale and you will have sold 15 irons today. That must be a record. You really like to sell irons and you happen to be very good at it. You could probably sell an iron to the Queen of England. Oh boy, here comes a good candidate.
	Customer:	You just love browsing through the housewares department in a big store. This is your favorite store of all. You never buy anything--you just like to look. You hope that no sales clerks bother you while you're having a good time looking.

After each role play students describe the nature of the work performed by the people interviewed their dependence on electricity and if they (students) would find the work interesting. Solicit questions and comments from the class.

Students illustrate the surveys with pictures of their workers and post them on the bulletin board. When it is time to change the bulletin board add the surveys to your career education resource library.

Useful Prior and Subsequent Activities:

- With parents' approval, students and their families can spend one evening using a minimal amount of electricity.
- Working in pairs, students can write their own role plays for presentation to the class.

Resources:

Book: • *Scientists Behind the Inventor,* R. Burlingame

Pamphlet: • *So You Want to Be a Scientist,* The Continental Press, Dallas, Texas

Film-strip: • "The Electrical Workers," Educraft, Inc., 6475 Dubois, Detroit, Michigan 48211

Comments From Teachers and Students After Using the Activity:

OCCUPATIONAL FOCUS:

- Gardener
- Farmer
- Landscape Architect
- Forest Ranger
- Park Commissioner
- Ecologist

SCIENCE RELEVANCE:

- Earth Science
- Conservation
- Ecology

Activity #38

Subject Area:

Science

PLANT A TREE, SAVE A TREE

Capsule Activity Description:

Class learns about the use and care of natural resources then deals with community landscape problems.

Teaching Prerequisites:

materials: survey (2 per student)
contacts with community: visit to class by gardener or landscape architect
approximate preparation time: 1 hour
approximate class time: 2-2½ classes

Science Objective:

to become aware of various ways we use and care for natural resources.

ACTIVITY

This activity introduces students to careers that are, in one way or another, directly dependent on natural resources. Some of these occupations use the land to produce a product, others work to protect it. Using their own community students determine sites where landscaping improvements should be made and plan these improvements.

The activity can be included in units on the earth, conservation and ecology. Depending on your focus at the time, the activity can be used as is or slightly altered to be more in line with your particular subject matter. For example, you are studying various types of pollution in an ecology unit. Invite an ecologist, pollution control monitor, or a person from a local environmental agency to class to discuss his or her work. Proceed with the activity as written, but instead of improving the landscape, you clean up the pollution.

Activity #38

To give students a background in the ways occupations relate to your unit of study, briefly discuss with them some or all of the following occupations:

- gardener
- farmer
- landscape architect
- forest ranger
- park commissioner
- ecologist

Arrange for a gardener or landscape architect to come to class as a guest speaker. If a parent is employed in one of these occupations inquire as to his or her availability or request assistance for securing a speaker. This person tells the class about his or her job and how it relates to the science unit being studied.

Request that the gardener or landscape architect take the class outside to the playground, a nearby park, or field to show students:

- Why it is or is not a good piece of land?
- What could be done to make it better?
- Why certain plants and trees grow there and if they have more than an aesthetic value.
- What else, if anything, could or should be planted there?

If your school is in the city and there is only a cement playground and no parks or field's nearby, take a walk around the school neighborhood and discuss its landscape problems and possibilities.

Next the class takes a survey of people in the community to find out if they are concerned about the local landscape and/or public conservation. As a class brainstorm for questions to use in the survey. The questions are written on the chalkboard. The class discusses the merits of each and chooses the best ones.

Surveys are duplicated and distributed two per student. Each student surveys two people––parents, relatives, neighbors, friends.

Allow two or three days for students to take the survey. As it is completed, students record the responses to two of the major questions asked in the survey on a chart placed on the wall or chalkboard.

Example.

	Community Needs More or Better Landscaping		Where
	Yes	**No**	
1.	✓		1. Corner of Elm St. and Main St.
2.	✓		2. Along Union Avenue
3.		✓	3.

On completion of the survey responses to various questions are read and discussed. Students draw conclusions about the community's awareness of local landscaping and conservation efforts.

From the list of places in need of landscaping the class picks three it thinks need the most improvement. Divide the class into small groups. Assign a site to each group. The groups draw up illustrated plans for making the sites more in relief, or as dioramas. To do this most effectively a field trip is taken to the three areas so the students can see, first hand, the present condition of the area they are to landscape. When the plans are completed, they are presented to the class by one or two members of the group.

After the presentations the class discusses the following issues:

- Why do people bother to landscape a piece of property? Is it always done just to make an area more beautiful?
- Can all plants and trees be planted anywhere? When planting, what do we look for in the soil and climate?

Useful Prior and Subsequent Activities:

Prior:
- To demonstrate erosion pour water over some loose dirt and over a piece of turf. Ask students to observe and react to the experiment.

Subsequent:
- With the help of people in the community students can work to improve the landscape of one of the sites.
- Students can present their findings to the city or town hall for consideration.

Resources:

Forest Service
U.S. Department of Agriculture
Washington, D.C. 20250

Society of American Foresters
1010 16th Street, N.W.
Washington, D.C. 20036

National Park Service
Department of Interior
Washington, D.C. 20001

Sierra Club
1050 Mills Tower
San Francisco, California 94104

Wilderness Society
729 15th Street, N.W.
Washington, D.C. 70005

Friends of the Earth
451 Pacific Avenue
San Francisco, California 94133

National Audubon Society
1130 Fifth Avenue
New York, New York 10038

Environmental Defense Fund
1901 N Street, N.W.
Washington, D.C. 20036

Conservation Foundation
1717 Massachusetts Avenue, N.W.
Washington, D.C. 20005

National Wildlife Federation
1412 16th Street, N.W.
Washington, D.C. 20036

Activity #38

Transparencies

- Ecology Transparencies, Teacher's Guide and Student Workbook, Western Publishing Co., 850 Third Avenue, New York, New York 10022
- Ecology Transparencies, Teacher's Guide and Student Workbook, 111 Barron Avenue, Box 519, Johnston, Pa. 15907

Comments From Teachers and Students After Using the Activity:

SAMPLE SURVEY

Name:

Address:

Occupation:

1. Do you think our community is pleasantly landscaped?

2. What are some examples?

3. Do you think our city/town should do more to make our community look better?

4. Where would you suggest they start their efforts and why?

5. Do you think that landscaping an area does more than just make that area look nice? If so, what?

(optional)
6. Would you be interested in helping us in a project to landscape a site if you agreed with the location and plans?

7. Where can we contact you?

OCCUPATIONAL FOCUS:

- General Career Awareness
- Researcher
- Pollster

SCIENCE RELEVANCE:

- Ecology
- Biology
- Chemistry
- Health
- Nutrition

Activity #39

Subject Area:

Science

PROBLEM SOLVERS

Capsule Activity Description:

Students are given a community or public problem to solve.

Teaching Prerequisites:

materials: surveys
contacts with community: students poll various people in the community
approximate preparation time: 1-2 hours
approximate class time: 1 class plus free time

Science Objectives:

to explore community problems and the ways they might be solved by science technology.

ACTIVITY

This activity can be used to supplement various science units and lessons (e.g., ecology, biology, chemistry, health, nutrition). It is most practically done by small groups of three or four students and it need not be done by the whole class at the same time.

Students are given a problem common to their community or of general public interest. People in the community are polled for their reaction to the problem, and based on that information students determine if the problem is worth trying to solve, and if so, how.

*This activity has been revised from an activity developed by Lee Laws. We are grateful for permission to use it. The original activity is part of *Elementary Guide for Career Development*, Grades 1-6, Education Service Center, (Austin, Texas: 1970) which may be ordered from Educational Service Center, Region XIII, 6504 Tracer Lane, Austin, Texas 78721, for $5.00

Activity #39

Each student polls two or more people in his or her neighborhood (parents, relatives, neighbors) for their feelings on the problem. The survey instrument can either be made up by you and given to the students, or they can design one for their own needs and problems. (A sample survey is attached.)

When all the polls have been completed, students compare and discuss responses. If there is sufficient public interest, the group finds someone to help them with the problem. Give the group several names and addresses of people who might be able to assist them in relieving the problem. In this case:

- Ecologist at a local university
- State legislator from your district
- Vice President, Public Relations, of local factory
- Pollution control inspector from state environmental agency

Your school principal, guidance department, other teachers, or parents can be of assistance to you in obtaining names and addresses of local people for your students to contact.

Each student picks one of the four to write to for help with the problem. The students find out what these professionals think about the problem and what they would or are doing about it in their respective positions (see sample letter).

Finally, the group presents its problem and possible solutions to the class as follows. In turn, each occupation researched is interviewed by a representative of "Citizens for Cleaner Air." The citizen representative states the problem at hand and voices the opinions of the people polled. The students role playing the occupations explain what they can do to solve or ease the problem.

After the presentation the class votes on the occupation or occupations it thinks can do the most good for the community in this situation. Discussion follows on one or more of these topics:

- Why will the occupation(s) you chose do better than the others at finding a solution to the problem?
- Can this problem be solved by only one person or one group of people?
- Is community or public support necessary to solve problems that affect so many people?

Useful Prior and Subsequent Activities:

- As a class, students can poll the community for a more widespread reaction to the problem.
- Students can find their own community problems and look for possible solutions.

Resources:

Advertising Agencies:
J. Walter Thompson
420 Lexington Avenue
New York, New York 10017

Grey Advertising Inc.
777 3rd Avenue
New York, New York 10017

Food and Drug Administrators:
Department of Health, Education and Welfare
Food and Drug Administration
5600 Fishers Lane
Rockland, Maryland 20852

Paint Company:
Sherwin Williams Co.
Manufacturing Department
Brown and Lister Avenues
Newark, New Jersey 07105

Books:

- *Occupational Information,* R. Hoppock, McGraw-Hill, 330 West 42nd Street, New York, New York 10036
- *Encyclopedia of Careers and Vocational Guidance,* Vol. I & II, William E. Hopke, Doubleday, Garden City, New York 11530

Comments From Teachers and Students After Using the Activity:

Activity #39 **SAMPLE SURVEY**

Name:

Occupation:

1. Do you think this city/town is having a problem with

2. Where did this problem start and how?

3. Is this problem worth solving? Why?

4. Is there anything we can do as citizens to stop this problem?

5. Who can help to make things better?

6. What will the person (or people) have to do?

7. Do you think he or she (they) will be successful?

Activity #39

Sample Problems

1. More and more people are smoking, and more and more people are getting lung cancer. People who don't smoke are being driven out of rooms by people who do smoke. Everybody is suffering together. What can we do?

   Community doctor
   Advertising company
   Local television station executive
   Teachers

2. All that kids eat today is junk. They eat candy, sugar coated cereals, snacks, and fried foods. Nothing has any vitamins and everything is packed with terrible chemicals. It's just a lot of empty food. We must save our children from this problem.

   Dietician
   Local doctors
   Food and drug administrators

3. Little children are eating lead paint and nobody is doing anything about it. Landlords don't help you when the paint is chipping, and parents can't watch their children all the time. These children and parents need help. This is a "paintful" problem.

   Local health and building inspectors
   Paint manufacturer
   Landlords of local buildings

4. Many people are disconnecting the anti-pollution devices from their automobiles to get better mileage and easier starts. Law enforcers don't do anything to these people when their deeds are discovered, and the air is getting dirtier. This chokes me up.

   Automobile repair person
   Community doctor
   Car sales person
   Police officer

SAMPLE LETTER

Dear ____________,

We are fourth grade students in Roseville, Texas. We are studying environmental science in school. We think we have a problem in our community. Our air is becoming bad and it is no longer good to breathe. We also think it might be hurting the animals and the plants.

What do you think about this problem? Is there any way that a person in your occupation can help us. If there is, what can you do?

Please send us any information you have on this problem and how a person like yourself would help us.

Very truly yours,

Ben Fultz
Brenda DeMarco
John Shim
Rosemary Perry

OCCUPATIONAL FOCUS:

- Environmental Protection

SCIENCE RELEVANCE:

- Biology
- Earth Science
- Ecology

Activity #40

Subject Area:

Science

EARTH, AIR, AND WATER

Capsule Activity Description:

In groups the class writes to various agencies and organizations to gather information on pollution and then applies it to the community.

Teaching Prerequisites:

materials: lined paper, envelopes, questionnaires, construction or poster paper, crayons, paint
contacts with community: writing and talking to people whose careers are related to pollution control
approximate preparation time: 1 hour
approximate class time: 2½-3 classes

Science Objectives:

to become aware of pollution, the reasons for it, what can be done about it, and the evidence or lack of it in the community.

ACTIVITY

This activity allows students to become aware of various types of pollution, who is involved in controlling the problem, and what they can do to help. Students write to several agencies and organizations for information on a particular type of pollution, inspect areas in the community for signs of pollution and report back to the class on their findings.

The activity can be integrated into several units in your science curriculum where pollution is an area of study: biology, earth science,and environmental science.

Activity #40

Divide the class into three groups; one to study land pollution, another water, and the third air pollution. The activity can also be staggered over a period of weeks or months, with groups of students working on it one at a time. The groups split into three smaller groups for the purpose of writing to various agencies and organizations for information on pollution.*

Water

- Federal Environmental Protection Agency
- Local water department (city or town)
- Large oil company or lumber/paper plant

Land

- Federal Environmental Protection Agency
- National park or forest in your state
- Sierra Club, Audubon Society, Friends of the Earth, citizen groups

Air

- Federal Environmental Protection Agency
- Local airport
- Sierra Club, Audubon Society, Friends of the Earth, citizen groups

Students ask for the following information in their letters (sample letter attached):

- description of land/water/air pollution and how to recognize it
- how we as citizens can help the situation
- what jobs are available in the field
- what kind of training is needed to do this work

Since the activity involves writing away for material, there will be a waiting period which could cause groups to be working on different parts of the activity at different times. If you prefer, the class can wait until all material is received and proceed together with the activity.

As material comes in, the small group who requested it reads it and lists ways in which to recognize pollution. When at least two packages of material have been received and read, the group comes together and compiles a comprehensive list of "pollution facts." Using the list as a guide, students make up an observation sheet to use in determining pollution areas in their community (see sample).

Over a period of two to three days pollution checks are conducted. Once again in small groups, students "inspect" for pollution and clean environment violators at sites (stream, park, air) you have chosen for them in the accessible area. These inspections take place at recess, during science class, after school. Each student is responsible for filling in his own observation sheet(s). Those students who are checking for air pollution can telephone the local air pollution monitoring station to find out the daily air pollution count.

When the group has gathered all its data, it makes a presentation in the form of an advertising campaign against pollution in the community. Making signs, posters and murals, several students point out the ways you can recognize pollution and where it exists in their community. Other students explain what you can do as a citizen to help fight pollution and what organizations you can go to for help. The remaining students in the group role play people working at occupations that are trying to find ways to fight and cure pollution—–who they are, what they do, and how you can become one of these people.

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*Addresses appear under resources at end of activity.

After the presentations, discuss with the class some or all of the following issues:

- What is pollution? For example, oil in a body of water is pollution, but water in an oil storage tank is also pollution.
- What are the areas in a community that are most easily polluted? Why?
- Why is pollution dangerous to animal and plant life and to our health as well?
- What can we do to help?
- If you worked in pollution control, do you think it would be rewarding? Why or why not?

Group posters, signs, and murals are hung on the bulletin board, in the school halls, and/or put on public display in a local community center.

Useful Prior and Subsequent Activities:

- Class can take a field trip to a local water purification station, dump or energy power plant.
- Class can participate in a local "clean-up" effort or organize their own.
- You can invite a member of a local anti-pollution organization to class to discuss the purpose and accomplishments of his or her group.
- Members of the class can learn how to use a Secchi Disk to test turbidity of water and demonstrate it to the class.

Resources: Students can write to the following for information:

Forest Service
U.S. Department of Agriculture
Washington, D.C. 20250

Society of American Foresters
1010 16th Street, N.W.
Washington, D.C. 20036

National Park Service
Department of Interior
Washington, D.C. 20001

Water Pollution Control Federation
3900 Wisconsin Avenue
Washington, D.C. 20016

Interstate Conference on Water Problems
c/o Council of State Government
1735 DeSales Street, N.W.
Washington, D.C. 20036

Air Pollution Control Association
4400 Fifth Avenue
Pittsburgh, Pennsylvania 15213

Air Pollution Control Office
Office of the Commissioner
Parklawn Building
5600 Fisher's Lane
Rockville, Maryland 20852

Citizens for Clean Air
502 Madison Avenue
New York, New York 10022

Environmental Protection Agency
Waterside Mall
4th and M Streets, S.W.
Washington, D.C. 20460

National Oceanic and Atmospheric
Administration
Gramex Building
8060 13th Street
Silver Spring, Maryland 20910

Sierra Club
1050 Mills Tower
San Francisco, California 94104

Activity #40

Wilderness Society
729 15th Street, N.W.
Washington, D.C. 70005

Friends of the Earth
451 Pacific Avenue
San Francisco, California 94133

National Audubon Society
1130 Fifth Avenue
New York, New York 10038

Environmental Defense Fund
1901 N Street, N.W.
Washington, D.C. 20036

Conservation Foundation
1717 Massachusetts Avenue, N.W.
Washington, D.C. 20036

National Wildlife Federation
1412 16th Street, N.W.
Washington, D.C. 20036

Transparencies:

- Ecology Transparencies, Teacher's Guide and Student Workbook, Western Publishing Co., 850 Third Avenue, New York, New York 10022

Comments From Teachers and Students After Using the Activity:

SAMPLE OBSERVATION SHEET

Water Pollution

Location:

Time of Day:

1. What is the color of the water?

2. Is there any debris or dead fish on the banks or floating on the water? Name the debris if you can.

3. Is there a film or similar substance floating on the water? Describe it.

4. Do you see any fish swimming in the water?

5. Is there a strange odor to the water? Describe it.

6. Are there any obvious reasons why you think this body of water might be polluted (factories, city dump, careless picnickers)? How have they promoted the pollution here?

7. Is there anything you can do to help this situation?

SAMPLE LETTER

Dear ________________,

We are students in the fifth grade at the Perkins School in Farmington, Massachusetts. We are studying different forms of pollution. Our group is studying (water/air/land) pollution.

We would like to find out as much as possible about this kind of pollution and how we can recognize it. We also want to know what we can do as students to help solve this problem.

Please tell us what kinds of jobs help to fight pollution, what these people do, and how we could become one of these people when we are older.

Thank you.

Sincerely,

Jill Andretti
Bob Jones
Jim Peterson

RESOURCES

RESOURCES

This Resources chapter discusses three aspects of career education which must be considered in order to implement the activities most productively. The first resource, Teacher Objectivity in Career Education, suggests how to avoid sex, ethnic, class, political, and religious stereotyping of careers and jobs. The second resource, Liaison with the Community, discusses some effective methods for identifying appropriate people, businesses, and groups in your community whom your students may want to interview or observe, and suggests ways of contacting these resources. The third resource, Effective Teaching Methods for Career Education, offers ideas on how to implement easily and effectively those instructional strategies, such as role plays, interviews, and games, which are highly effective for teaching career education.

TEACHER OBJECTIVITY IN CAREER EDUCATION

This resource is designed to help you to avoid sex, ethnic, and class biases when you implement the activities. Such biases can occur in career education because the topics and feelings discussed are often very personal. However, you will not only want to prevent **your** personal feelings about particular careers and individual students from intruding into the classroom, you will also need to help your students become aware of and explore **their** biases and stereotyped thinking.

Support, Not Direction

Your role in career education is to supply opportunities for students to gain information about careers, to investigate interesting careers, and to evaluate themselves in relationship to the specific careers under study. In this process, you supply a supportive, not a directive function, by helping students to find out the range of opportunities available and helping them to discover for themselves their own interests and abilities.

How can you avoid getting drawn into a directive role? What can you do if a student asks you, "Do you think I'd make a good electrician?" or "I've been accepted at MIT and also at Louisiana State University. Should I go to MIT and become an engineer or go to LSU and major in history?"

Some useful ways of responding to requests for advice and yet maintain your objectivity are to:

- Be completely honest. Students can detect insincerity and hypocrisy very quickly. This does not mean telling them everything you feel or believe about a job or answering all questions about your own occupation and background. It does mean telling students you don't want to express your opinion on an issue, if you don't, and saying you won't answer some or all questions about your personal job experiences, if you don't want to.
- Avoid giving advice about what jobs students should prepare for or select. You are not a guidance counselor. This may be hard to do since it is what students often seem to want most. Unfortunately, giving advice about career preparation and selection rarely helps students because:
    - it excuses the student from responsibility for his or her decision if he or she does take your advice;
    - it discourages students from solving their own career problems and asking the **right** kinds of questions from adults.
- Offer information, clarify ideas, suggest methods for finding more answers (research, sources of help), and ask students leading questions ("Why are you afraid of becoming an electrician? Do you think you could develop these skills? Do you have this kind of personality?").

Neutrality, Not Moralizing

Students and adults have stereotypes abut certain occupations, some of which, like garbage collection and psychiatry, are the butt of many a joke and snide comment. You can avoid denigrating these occupations––and avoid moralizing favorably about careers traditionally viewed as prestigious in the following ways:

- Avoid making judgments about careers and jobs, such as, "It's terrible to be an obstetrician-- you can get called out of bed at any hour." Instead, note that "Obstetricians sometimes have to be called out of bed at all hours of the night."
- Tell students who ask, "Do you think it's bad to be a garbage collector?" that they must form their own conclusions. You might begin by asking them what they mean by "bad" or "good" and whether they think the salary and hours would be sufficient compensation for the job.
- Whenever occupations or careers are discussed that society makes fun of or degrades, such as garbage collection and ballet dancing, raise for discussion some of the advantages and satisfactions of such occupations as well as the disadvantages and dissatisfactions, and how the people who hold such jobs cope with society's negative attitudes.
- Don't glorify careers in medicine, law, engineering, education, and so on, which are generally viewed as lucrative, prestigious, and enjoyable. Let students, on the basis of facts provided in the activities (and from you), come to their own conclusions about these high prestige occupations. In short, present facts ("Being a lawyer can be boring at times.") not judgments ("You won't like being a lawyer, because it often involves boring work").

Provocation, Not Restriction

While you want to be careful not to let your biases about careers intrude into your teaching, you do want to encourage--ever provoke--your students to express their stereotypes and prejudices. Students need to express their biased opinions and strong feelings about jobs because only by verbalizing and discussing their attitudes will students be able to correct their misconceptions and make career decisions rationally. In order to create an open class atmosphere where students feel free to express honestly their personal feelings and opinions about jobs you will want to:

- Welcome all student opinonis non-judgmentally. This does not mean simply tolerating divergent views; it means actively soliciting them by:
    - indicating that in selecting which career to explore or pursue there are not "right" or "wrong" answers;
    - explicitly asking students to express their opinions and feelings and indicating that while you, of course, have opinions and feelings of your own, you will not express any judgments of what the students say, nor are you interested in judging what they say;
    - asking open-ended questions, such as, "Is it all right to switch careers after age 50?" rather than, "Why is it often difficult to switch careers after age 30?"
    - including in quizzes and tests preference questions that are not graded on the basis of what preferences students express but are either ungraded or graded on the basis of how thoroughly the preferences were explored.
- Repeatedly encourage students to address their opinions to each other and to respond to each other's comments rather than always directing their statements to you.
- Have students discuss issue-oriented questions in small groups and instruct pupils to concentrate on the expression and substantiation of opinions.
- Take advantage of occasions when students seem to "get off the track" in a discussion and talk about feelings that may seem unrelated to the career education issue at hand. Often these so-called "irrelevant" opinions and feelings are the basis for students' (and adults') underlying feelings about occupations.

- Encourage and assign students to read fictional and autobiographical literature about careers where the emphasis is on expression of feelings.

Objectivity, Not Bias

Since biases and stereotyping are natural human responses to living in any society, you will want to make a special effort when you teach career education to be aware of and to compensate for class, sex, ethnic, and political biases toward occupations that either you or your students may have and express. In general, adopt a dual posture when it comes to sex, race and other biases in career education. On the one hand, try to be as **tight-lipped** as possible **about your own biases,** preventing them from intruding into the classroom. On the other hand, be as **active** as possible in promoting full exploration of all biases expressed and felt **by your students.** Seize every opportunity to promote discussion about **their** attitudes and stereotypes about who should consider what kinds of jobs and careers.

There are four areas of bias you will want to be careful to avoid in your own approach to teaching career education.

- **Class Bias:** Try to devote "equal time" to talking about and implementing activities on doctors, lawyers, and engineers vs. truck drivers, typists, and construction workers. In addition, don't express the opinion (if you hold it) that lower class or poor students should not consider entering white collar professions or that middle-class students shouldn't contemplate taking blue-collar jobs. Instead, probe the reasons students give for their job preferences and discuss with them the advantages and disadvantages of the jobs or careers being studied.
- **Sex Bias:** Avoid the use of sex-biased occupational terms. Refer to "fire fighters," not firemen, "chairperson," not chairman, and so on. The use of sex-free terms will sound unfamiliar to most students and may therefore prompt questions about them and a lively discussion. Also avoid using the pronoun "he" when referring to people in general, and instead say "he or she." More importantly don't use the pronoun "she" when referring to people in occupations traditionally held by women (nursing, elementary school teaching, clerical, etc.) or "he" when referring to occupations traditionally held by men (law enforcement, engineering, etc.). Finally, don't express opinions you may have about why women should not become baseball umpires, taxi drivers, or surgeons or why men should not become nurses, ballet dancers, or telephone operators.
- **Ethnic Bias:** As with sex or class bias, try to ignore any feelings you may have about students from particular ethnic backgrounds who may be considering occupations which much of society regards as "inappropriate" for blacks, whites, Mexican Americans, Native Americans or any other ethnic group. Remain neutral not only about minority group students who express interest in entering traditionally majority dominated professions, but also toward white students who are considering taking jobs traditionally held by minority groups.
- **Political Bias:** Finally, be aware of your feelings about such jobs as careers in the military, working for the United Nations, writing for the **Daily Worker** or the **Minuteman,** and other politically sensitive occupations. Try not to let your political opinions intrude into your discussions of these careers.

When your **students** express biased or stereotypic sentiments, accept **their** feelings and opinions as honest reactions of human beings and treat them calmly and honestly. In many cases the reaction of other students will balance the biased statements. Values are learned slowly and changed slowly, so a one-shot overreaction on your part will have little or no effect on the students except to quiet them in future discussions and possibly entrench the bias.

Many students are not aware of their own biases or of the biases in the world of work. Career education should seek to make **all** students aware of **all** possibilities for careers by bringing about such awareness.

Another aspect of bias in career education you can discuss with students is awareness of social prejudice and stereotyping which people can expect to face in selecting certain occupations, whether such biases should influence their choice of a career, and how, having selected a career which may provoke prejudice, to cope with that prejudice.

For example, you might discuss some of the problems faced by women who try to become or already are doctors, politicians, and baseball umpires or problems faced by minority persons who seek to become or who have already become bankers, skilled craftspersons, and police officers. Discriminatory behavior you can discuss includes less preferred job benefits, and slower or non-existent promotion opportunities. You can also discuss and **role play** ways women and minorities can try to cope with the discrimination they may experience in these occupations. Students can discuss and role play such options as firmly but not defensively resisting all or crucial instances of discrimination; seeking internal (through the comapny or agency) or external (through the courts) redress of grievances; and retaliating more forcefully against the persons responsible for the discrimination in ways that can terminate the discrimination even if these methods won't change anybody's prejudiced attitudes.

Student awareness of biases in others and of their own prejudices can be approached in many ways. The main requirement is that you be alert to opportunities to **bring up the issue** indirectly and naturally. Ways in which to address the issue of bias and stereotyping include the following:

- Assign students to nontypical roles such as the male nurse, the female carpenter, and the black employer or supervisor confronting the white employee. This type of indirect approach can help students learn to cope with discrimination and bias and also present an opportunity for students to react to the issue of discrimination in a realistic context.
- Whenever a student makes a sex- or class-biased comment, raise the issue for discussion——for example, if a student laughs at the idea of a female astronaut, ask the class to discuss what is "wrong" with a woman becoming an astronaut and what they find "funny" about the idea.
- When a student refers to a "fireman" or "repairman," point out the masculine bias in these terms and ask what significance there may be to the use of such words in terms of sex bias.
- When students develop polls or interview instruments, review them for sex and class biases and stereotyping and point out any such prejudices.
- Conduct one or more of the activities which specifically involve consideration of sex or class bias, such as Activities 2, 4, 7, 16, 17, 20, 21, 27, 34 and 36.

In conclusion, your major concern should be to listen to yourself speak (and think) so you can avoid expressing biased (or any) opinions about students or occupations and, conversely, to listen carefully to what your students say so you can point out to them what may be biased thinking on their part and raise for discussion specific instances of class, sex, ethnic, and political bias as they relate to careers and jobs.

LIAISON WITH THE COMMUNITY

Since many of the activities in this manual involve field trips and interviews with members of the community, this resource is designed to help you identify and enlist support from appropriate individuals, groups, businesses, and agencies in your local community. For information on how to plan such activities as field trips and interviews, consult the last resource section, Effective Teaching Methods for Career Education.

Identifying Places and People to Contact

When arranging a field trip or interview, you will need to: (1) identify appropriate **places**––businesses, agencies, etc.––to visit; (2) identify the **person** within the site you have selected who can arrange for the trip, and (3) identify appropriate **tour guides or interviewees** at the site.

When selecting sites to visit you of course want to choose those which are relevant to the activity you are implementing. You should also pick ones which are likely to be interested in providing a tour or interviews so that you do not waste your time contacting businesses or agencies who keep rejecting you. Therefore, your first step should be to learn whether your town, city, or school district is one of the many which provide a list of companies and agencies that encourage field trips. You can obtain this information from your State Department of Education, local superintendent of schools, or state or school audio-visual department. Some localities that do provide such lists are:

Los Angeles City Schools
Baltimore City Public Schools
Cuyahoga County Schools (Ohio)
Antioch Unified School District (California)
Marin County Schools (San Rafael, California)
Washington, D.C. Public Schools
Milwaukee Public Schools
New York City Public Schools
Schenectady City School Districts (New York)

There are several other resources you can contact for help in identifying companies and agencies which encourage field trips. The best persons to help you make contacts are:

1. School administrators who have contacts in the community;
2. The school guidance department;
3. Students' parents who work.

You can also thumb through the advertisements in last year's school yearbook for companies which, having already made contact with the school, may be receptive to your requests. Failing all else, you can seek information on sites to visit in the public library, in the Yellow Pages of the telephone book, from local labor unions, and from business associations and fraternal clubs, such as the Rotary Club, Lions, Masons, Elks, Moose, Chamber of Commerce, and Better Business Bureau.

Having identified the place you want to visit, your next task is to decide whom to telephone or visit at the site to arrange for the field trip. What you want to do is to make as few phone alls or visits as possible before contacting the person in the company or agency who has the **responsibility for authorizing** a field trip. When possible, utilize the same contacts listed above to learn whom you should call or visit. If you must, take "pot luck" by asking the company switchboard for one of three departments:

- Personnel Office;
- Information Office;
- Public Relations Department.

It may take you a few calls to reach the person you want,but by starting with these three offices you will have already cut through considerable "red tape."

Enlisting the Interest of Target Businesses and Agencies

Once you have identified people and places to visit, there are several ways to go about contacting them and stimulating their interest in your project. The best approach, where time permits, is to (1) send a letter indicating you plan to call for an appointment and explaining why you want to meet, (2) telephone two or three days later to set up a time for an appointment, and (3) visit the responsible official.

In all your communications––in your letter, your telephone conversation, and during your visit–– you may need to combine tact with persistence to enlist the individual's support. On the other hand, many people and places will welcome a visit from your students. If you are expecting objections or have never arranged for a field trip before, there are several ways in which you can prepare yourself for the telephone call and visit.

1. Try to find out whether other teachers in your school have had any contacts with the agency or business in question and can give you advice on how best to approach it.
2. Try to get the name of at least one person who works for the business or agency so that you can use that person's name as a reference when you make your call and visit.
3. Role play the telephone call and the visit with your spouse, friend, or students, with the other party playing the role of the agency or business contact and asking you different types of questions––informational, hostile, curious, indifferent, busy.
4. Have already at your fingertips the answers to many questions the business or agency contact is likely to ask you. This requires some advance planning. Industries or agencies are likely to want to know the following from you before they agree to host a field trip;

   - How old are the students?
   - How many will be coming?
   - How many adult chaperones will there be?
   - Will there be any discipline problems?
   - What days and hours can they come?
   - How long will they want to stay?
   - Do the students' parents know about and approve the trip?
   - What do the students want to see?
   - With whom do the students want to talk?
   - Will the students be bringing cameras or tape recorders?
   - How will the students be getting here and back to school?

5. Be prepared to be flexible. If the contact says the business or agency can accommodate only half the class at one time on Wednesday mornings, indicate you will examine this possibility with the appropriate school personnel and call back.
6. Try to think of ways in which the trip will benefit **the agency or business.** Do a little "selling," if you have to. For example, perhaps the trip will provide the agency (e.g., police, courts, prisons, juvenile detention centers, parks department, welfare department) with a little free

public relations. The trip may also help a business (e.g., toy stores, food chains, automobile companies) with some free advertising. You can even have the school system's purchasing agent make the initial contact, since many businesses may want to become or remain the school's supplier of toilet paper, food, desks, office supplies, and heat.

7. Think in advance of the objections a particular business or agency may raise and of ways to meet their concerns. For example, have other classes or small groups of students taken field trips in the past to an agency? If so, is the agency likely to feel "saturated" with field trips and tired of them? It might be valuable to let the agency know that the trip will be related to career education, that your students may be interested in exploring potential job opportunities with the agency, and that they have been deeply engaged in the study of the occupations and operations of the agency.
8. Have ready the questions to which **you** need the answers before you call or visit. This is important, because it will save you and, more importantly, the agency or business the trouble of having to talk with you a second time and will also indicate the seriousness with which you view the trip––you've obviously given it a lot of advance thought. Questions you may want to ask include:

    - How many students can the agency or business accommodate?
    - What legal problems are there in bringing students into the site? (See the discussion of this problem below.)
    - Should the students wear any special type of clothing (e.g., old clothes for visiting a steel plant)?
    - Can the students also ask questions of some of the employees? In particular, can they talk to _________?
    - Can the students take notes during their tour or bring tape recorders or cameras?
    - How much time will they have for the tour?
    - How much time will they have for interviewing employees?
    - Is there a translator or someone who speaks Spanish?
    - Will students on crutches have difficulty getting around?

While all these techniques for enlisting sufficient if not enthusiastic interest in your activity on the part of agencies and businesses can be helpful and at times essential, much will depend ultimately on your own personal style of talking with and interacting with people. In general, the more consideration and awareness of the agency's or business's feelings and concerns you can show, the more likely you are to be successful in winning its approval for a field trip.

Logistics of Field Trips and Interviews

While you can certainly participate in chauffeuring students to businesses and agencies for their interviews and tours, unless you have a school bus at your disposal, a good deal of free time, and considerable patience, you are not going to be able to take your students on more than one or two trips a month. Your major resource for transportation will therefore be parents. Make use of them. Not only will they be doing you a favor, they will also be helping their children and developing a sense of involvement with the school.

Often, if you tell the class you need drivers or chaperones, students themselves will offer the "services" of their parents to take them on a trip. You can directly ask students to ask their parents to drive them to the field trip site or to accompany them on the bus or subway. When you do this, you will get better results if you write the parents a personal note indicating the purpose, nature, and time of the trip and why you need their assistance. Follow up any positive responses with a phone call to confirm the time and place to meet with the students and pass this information on to the students.

Legal Issues Involved in Field Trips

Generally, industries and businesses have their own insurance which protects them if a visitor is injured while on their property. However, this does not mean that industries and agencies particularly want to risk such a suit nor that your students and their parents are particularly anxious to initiate one, should an accident occur. Therefore, you will want to inquire of your school superintendent or principal what legal coverage you and your students have in case you, they, or their parents should be injured during a field trip. For example, in many communities students can sue **you** if you are driving them to a site and get into an accident.

The most effective way to protect yourself is to secure for each and every field trip a signed letter of approval from a parent or legal guardian giving his or her approval for the student taking the trip. The letter must indicate the purpose, date, and destination of the trip. Give copies to your students and tell them they can't go on the trip unless you have a signed copy returned to you **before** the trip. You may also want to consider sending the letters to their homes.

When all is said and done, you may have to run the risk of a car accident and lawsuit if you really want to provide the field trip. The important consideration is to learn what legal risks you, your students, and any chaperones are running, take what precautions you can to minimize them, and make your decisions with full knowledge of the potential consequences.

Two Key Resources

When you set up field trips and interviews, you have two key resources you can call upon for assistance: parents, administrators, and guidance counselors.

Parents. We have already stressed the utility of using parents to help transport and chaperone students, the importance of securing their permission for any field trips their children plan to take, and the likelihood they can help identify and even contact businesses and agencies where they or their relatives are employed. You can also enlist parents' support and assistance by formally writing them early in your unit to outline what you plan to teach, how you expect to teach it, and why. Invite them in this letter to phone or visit you at school for further information. Most parents will appreciate being spontaneously informed and consulted on their children's education. You can also invite parents to observe your class and to share with students in appropriate activities their own work experiences (although you should be sensitive to the feelings of students who will be embarrassed in front of the other students by having one of their parents come to class.)

Administrators. As already indicated, school administrators and guidance counselors can also be of assistance with the contacts they have with businesses in the local community. In addition, your effort to enlist their support and assistance will be simplified if early in your unit you inform them, like parents, about your plans. Not only will you thereby have "read them in" in advance to your course plans, you will also have provided them with the necessary background information to respond to any telephone calls from parents or other members of the community questioning the legitimacy of your field trips, interviews, or polls. Finally, you can solicit suggestions from administrators and guidance counselors on what they would like included in career education activities.

After the Trip

After each field trip, write a letter of thanks, and have each group or class of students do the same, to each key person in the business or agency who made the trip possible. Not only is this a simple act of courtesy, it also ensures that future students will meet with a warm response when they try to set up a trip to the same site. Also thank any guidance counselors, administrators, and parents who provided assistance. At the end of a series of trips you can write a letter to the editor of the community newspaper to publicly express your thanks to the parents who helped you and to the businesses and agencies which provided tours and interviews.

The following check list may be helpful to you as you arrange for field trips and interviews. You can also duplicate copies for your students each time they arrange their own field trips or interviews.

CHECKLIST FOR ESTABLISHING LIAISON WITH THE COMMUNITY

- ____ I. IDENTIFY PLACES AND PEOPLE TO CONTACT
  - 1. Identify site by using
    - ____ a. Published list of interested agencies
    - ____ b. Personal contacts
      - ____ i. School administrators
      - ____ ii. Students
      - ____ iii. Students' parents
      - ____ iv. School guidance department
    - ____ c. Advertisements in school yearbook
    - ____ d. Yellow Pages
    - ____ e. Business associations
  - 2. Identify whom to write and/or telephone
- ____ II. ENLIST INTEREST OF TARGET BUSINESSES AND AGENCIES
  - ____ 1. Send letter
  - ____ 2. Plan for problems
    - ____ a. Seek advice
    - ____ b. Seek contacts
    - ____ c. Role play
    - ____ d. Have answers ready
    - ____ e. Be flexible
    - ____ f. Identify how you can help the site
    - ____ g. Foresee objections
    - ____ h. Prepare your questions
    - ____ i. Adopt a firm but senstive posture
  - ____ 3. Telephone
  - ____ 4. Visit
- ____ III. PLAN LOGISTICS
  - ____ 1. Transportation
  - ____ 2. Chaperoning
- ____ IV. CONSIDER LEGAL ISSUES

____ V. UTILIZE FULLY ALL RESOURCES

1. Students
2. Parents
3. School administrators and guidance counselors

EFFECTIVE CAREER EDUCATION TEACHING METHODS

This resource contains suggestions on how you can most effectively implement the teaching methods suggested in the activities. The teaching methods incorporated in the activities are among the best instructional strategies for enabling students to become aware of different occupations, develop self-awareness, explore occupations, and make tentative career decisions.

The methods discussed are:

- Role Plays
- Games
- Field Trips
- Interviews
- Polls
- Small Group Discussions
- Class Discussions
- Peer Teaching
- Independent Study
- Reports
- Writing

ROLE PLAYS*

Role playing is an extremely valuable method of learning about careers.

Essentially, role playing is an activity in which one person pretends he or she is someone else and acts in the way he or she believes that the other person would act. Thus, a student can act as if he or she were an employer, an employee, or a recently unemployed worker––that is, he or she can play the **role** of these other persons.

*For further readings on role playing consult one or more of the following books and pamphlets.

Boocock, Sarane S., and E.O. Schild, eds., *Simulation Games in Learning,* 1968, hard cover @ 8.95. Sage Publications, Inc., 275 South Beverly Drive, Beverly Hills, California 90212.

Carlson, Eliot, *Learning Through Games,* 1969, hard cover @ 4.50. Public Affairs Press, 419 New Jersey Avenue, S.E., Washington, D.C. 20003.

Glazier, Ray, *How to Design Educational Games,* 1969 (fourth edition––1973), softcover booklet @ $2.50. Games Central, 55 Wheeler Street, Cambridge, Massachusetts 02138.

Inbar, Michael, and Clarice S. Stoll, *Simulation and Gaming in Social Science,* 1972, hard cover @ $10.50. The Free Press, a division of the Macmillan Company, 866 Third Avenue, New York, New York 10022.

Tansey, P.J., and D. Unwin, *Simulation and Gaming in Education,* 1969 hard cover @ $5.00. Harper and Row, Keystone Industrial Park, Scranton, Pennsylvania 18512.

Twelker, Paul A., ed., *Instructional Simulation Systems,* 1969, paperback @ $6.75. Continuing Education Publications, Waldo Hall 100, Corvallis, Oregon 97331.

Zuckerman, David W., and Robert E. Horn, *The Guide to Simulation/Games for Education and Training,* oversize paperback @ $15.00. Information Resources, Inc., P.O. Box 417, Lexington, Massachusetts 02173.

Utility of Role Playing for Career Education

Role plays have three great advantages in career education:

1. Role playing offers an unusual opportunity to **promote understanding and empathy** between types of people who often have difficulty communicating effectively with one another, such as consumers and salespeople, citizens and politicians, employers and employees, parents and children, and teachers and students. In career education students' understanding of the problems and attitudes of executives, managers, employers, employees, union members, strike breakers, labor leaders, unemployed workers, underemployed workers, and other groups can be promoted by role playing these people.

2. Role playing allows students to **experiment with occupational roles and personalities** they may be unable to assume in real life (due to lack of confidence, peer pressure, etc.). For example, the extremely shy student who plays the role of a very outgoing person his or her own age may get the opportunity to forget momentarily his or her shyness and experiment with a new role. Role playing allows students to "try on" personalities and roles in a non-threatening situation.

3. Role play encourages the development and expression of **feelings** about careers. This is particularly important in a curriculum dealing with an emotionally charged area such as how to support yourself for the rest of your life.

Designing Role Plays for Career Education

1. When to Use Role Plays

Role play is most appropriately used to illustrate and explore relationships involving problems between people about work and their attitudes toward career issues. Some examples of problem situations that lend themselves well to role plays are:

- Labor union leaders "negotiate" a new contract with leaders from management.
- Members of a community "debate" the type of new industry, i.e., new jobs, to be allowed into the area or solicited to enter the area.
- Minority person or woman seeks to "persuade" a company to hire a certain percentage of minority or female employees.
- A qualified woman "applies for" a job as an automobile mechanic, construction foreman, etc. and is kidded or harassed by her potential male colleagues.

2. How to Write Role Plays

The most important task in role play is getting people emotionally involved in their new roles. To help achieve this you must provide the students with written "role profiles" or descriptions of the person whose role they will adopt. Each role profile should:

- be as brief as possible;
- be written in the second person ("You believe you are the most qualified person for a job but someone else got it," not, "The person you are playing thinks he is the most qualified . . . "); and

- be given to students in advance of the actual role play if research or familiarity with the part is necessary.

The role profile should include enough concrete details so that the role is clearly structured and focused and the student understands the character he or she is to portray. To ensure this the role profile should provide the student with:

- The motives and goals of the role ("You want your wife to stay home and let you support the family.");
- Obstacles in the way of achieving your goals ("Your wife claims that she is bored now that the children are married."); and
- Enough incidental information about the person to make him or her seem real to the student. ("You are 42 years old, have less education than your wife, and like to be the boss in your home.").

There is another type of less structured role profile which requires the participant both to **define the character** he or she plays as well as to resolve the problem. This type of more open-ended role play enables students to explore several different identities as they try to resolve the problem presented in the role play situation.

3. How to Write a "Scenario"

A scenario is a capsule history of the events that precede the situation that is going to be role played. The scenario contains all the information that is common knowledge to all players. The last sentence sets the stage for the action of the role play. ("This husband comes home to find his wife looking up the telephone number of an employment agency.") You or your students can write your own scenario or take a published story and omit the ending, with the students role playing possible completions.

How to Teach Role Plays

- **Introducing role playing to students:** Always begin by explaining what role playing is and what it is intended to accomplish. Give an example. You can then engage in "warm up" activities with students who are unfamiliar with role playing. You can, for example, have students respond **in writing** to several scenarios taken from newspapers, articles, or books or to scenarios which you or your students develop. You can also relate an incident similar to the one in the role play and ask students, "Have you ever been in a situation where you . . .?" After students have talked about their experiences in this example, you can move on to indicate that they are going to role play a story similar to the one they just discussed. Finally, you can have your students practice with a sample role play in which they play their parts from their seats, using dialogue and no action. (If students are unable to act out role plays even after several attempts, in-seat role plays can often be profitably used.)

Above all, treat role playing as a serious learning activity both when you introduce it and when you supervise it. Otherwise, students may view it simply as "fun and games," not as the potent learning method it is.

- **Moderating a classroom role play activity:** When introducing an actual role play activity begin by passing out and/or explaining the scenario to the whole class. Ask for volunteers to play the roles. Avoid selecting students who volunteer to play roles that may be too emotionally upsetting for them——for example, letting a student whose father has recently been killed in a job related accident play the role of the government inspector discussing job safety requirements at an employees meeting.

Pass out the appropriate role profiles only to each participant.

Before any action takes place, instruct observers to save all comments and questions until the role play is over. Observers should be instructed to think about how **they** would act were they role playing. Instruct participants that they have the right to call a "cut" in the action anytime they want without having to say why. This is to allow participants who feel they are getting too emotionally involved an easy "out" from what may, on rare occasions, be an unpleasant situation. You also need to be alert to the action and feelings of the role play and should not hesitate to call a "cut" if you feel the role play is arousing too much anxiety.

While action is in progress, do not inhibit it by commenting on or altering what is being said or enacted.

Observing students can participate in longer role plays as "reporters" who write down and/or later verbally describe what they saw and heard, comparing their accounts with each other and with what the role players felt occurred.

The role play ends when participants have reached a logical ending point or you "cut" the action because it is dragging or has become irrelevant. However, students can and often should repeat the completed role play as it stands with different participants or with new role profiles. Such repetition enables students to experience and observe a range of possible solutions to the problem presented in the role play.

- **Following up a role play:** Students should be encouraged to develop and use their own role plays and scenarios or to revise the ones you develop. Once attuned to the technique students can often create role plays and scenarious about work issues that contain a realism and relevance that you may find difficult to attain.

When an individual or series of role plays is over, focus in the ensuing discussion on:

- what the students' feelings were as they role played;
- what different actions the observers might have taken were they in the role play;
- what their attitudes were toward the other players;
- what the participants learned about the role they were playing and about the other roles.

During this discussion avoid giving your opinion of whether the role played solution was "right" or "wrong" but concentrate instead on eliciting **alternative** solutions.

GAMES

Educational games harness the student's natural motivation to "play" and direct it for educational purposes. A game is a contest between adversaries (players) who act under constraints (rules) to achieve an objective (win). The player's "business" in a game is simply playing it to win; in educational games, learning is a natural by-product. The reason for this is that in order to play the game players must learn the rules in order to simulate a real-world process. Thus, by learning the rules of the game, players learn the process that is being taught. For this reason educational games are highly motivating; initially, a student need not even be interested in the subject at hand so long as he enjoys playing games.

There are several types of educational games, including role-play games, board games and drill games.

- **Role play games** are used to teach processes involving much negotiation, compromise, conflict, etc.––in general, human interaction. They differ from role plays, however, in that they are usually more structured (focusing on processes, not simply situations) and a winner (or several) is identified.
- **Board games** closely resemble commercial entertainment games in the paraphernalia they utilize (chips, boards, play money, etc.). They are applied to processes which benefit from graphic representation, such as various job levels in the manufacturing industry (or office occupations, etc.).

Most games are hybrids, in that they utilize role playing and boards, charts, etc. to record the progress and outcomes of human interactions.

- **Drill games** are placed in a separate category because the rules of the game do not necessarily simulate real-world processes and issues. Rather, the basic element of competition, common to all games, is utilized for motivational purposes in teaching or reviewing facts and concepts. For example, a game distinguishing job titles in relationship to the fifteen job clusters is a motivating way of teaching and/or reviewing the subject. Drill games generally utilize boards, cards and other paraphernalia although the spelling bee is a classic example of one that does not.

Utility of Game Play for Career Education

Games are useful in career education for at least six important reasons:

1. Educational games (even drill games) involve decision making, a necessary skill in selection of a career to explore or enter. Games encourage students to weigh the consequences of alternative decisions and develop effective strategies for winning. An important follow-up to game play is the discussion on why students acted as they did, what strategies proved effective, and what influenced them to choose one course over another. Students thus have the opportunity to "practice" decisions without actually having to suffer real-world consequences.
2. Educational games compress time and experience and therefore expose students to **more** decision making opportunities sooner than they would face in real-world situations, and more important, provide quick feedback on how effective their decisions were. In addition, in most games there is usually no single right answer. Players must therefore **experiment** with many alternative strategies and decisions to discover which are effective under what circumstances.
3. Games are motivating. Most students play to win. Therefore, drill games especially lend excitement to what might otherwise be boring review exercises. Games also can serve as springboards for further study.
4. Games are "self-evaluating." Poor game performance can suggest the need for further play (review) and/or other forms of reinforcement of learning. Although it is not their primary application, games can thus represent a diagnostic and evaluative tool. Another aspect of this is that effective game performance means success in the game. Students, by winning or doing well, are rewarded intrinsically, rather than extrinsically by the teacher.

5. Games provide special opportunities to learn and to perform well for students who have limited or poor reading skills or other learning handicaps. Written information is often minimal; what is included must be utilized for successful game playing. Motivation to read is thus built in since students **need** the information to play the game. Students who consistently fare poorly in conventional classroom activities often do well in games because effective strategies, whether arrived at by conventional or unconventional methods, or with skills normally not cultivated in class (such as negotiating), are rewarded. Thus, games often motivate previously apathetic students to improve poor student self-image and do better in non-game activities as well.

6. Games integrate students of diverse ability levels and encourage peer learning. Students learn the rules of the game from each other as they play and pick up good strategies from other players.

Teaching Classroom Games

- **Introducing a game:** Display each different item of the game materials to the group(s) before play commences and explain the function of each very briefly. Then assign roles (where appropriate) and distribute rules and other materials to players. When a game involves few players, assemble several groups of players and distribute a set of game materials to each. Simultaneous play by the entire class is desirable, because if any one group plays, the rest of the class will generally want to watch rather than paritcipate in other activities.

  Consider mixing students of different ability levels, particularly if teams of players perform as one actor. Slower students will learn from more able ones. Where a game calls for each player to act as an individual, the teacher may wish to keep the ability levels fairly close so that one or a few players are not at an obvious disadvantage.

  Demonstrate some sample game moves by asking one or a few players to select their first action.

- **Moderating play:** Circulate among the players, and clarify rules if they ask questions. Where possible, encourage students to come to their own decision about an ambiguous rule in terms of what would be logical and accurate for the process under study. Resist the temptation to correct a student about to make an incorrect or poor move. The game itself usually penalizes errors and rewards correct or effective moves. Students must experiment and make decisions in order to learn from the game. However, if play is slow, suggest a move or a strategy to a player or a group to catalyze the action. Encourage experimentation but avoid suggesting all the options. Leave that to student exploration.
- **Post-game follow-up:** Determine the winner(s) of the game according to the scoring rules provided. Usually, players are rated on continuum, so that instead of one winner and many losers there are graduations of effective players. Thus, it is unlikely that many individuals will feel themselves "the losers" and be hurt thereby. Winners in different groups can be announced to the class and can be asked to compare strategies.

  A good way to begin a follow-up discussion is to ask the winner(s) what he or she did that was particularly effective, or, in other words, why he or she thought he or she won. Ask students what they would do differently next time, what was their best move, worst move, etc. To synthesize the actions in a game, start with the concrete details of play. Rather than asking "What did you learn?" (the usual response is "Nothing") ask "What did you do?"

Next, move on to analyzing the alternative decisions available to players, the consequences of various decisions, influences on the particular decisions they made, etc. This leads directly into discussions of issues in terms that are defined more broadly than the specific details of the game.

Encourage students to change the rules (or other items) in the game which they feel are inaccurate or which represent interesting variations or questions about a process, and let them play it again.

You may wish to stage a class "play-off" or even one for the school at large, if more than one class is working with the same career unit at the same time **and** if the game may be profitably replayed. (Some games, particularly review games,can be learned **in toto** and would not offer new learning to players who mastered them. These are games with a finite number of facts under review and are probably not profitably replayed.)

Finally, you might put your best players against some parents or other adults in order to demonstrate to both groups how much career information was learned.

FIELD TRIPS

The heart of a good field trip is the **immediacy** it provides—–that is, the first-hand observation of activity that normally is learned about in schools only second-hand through readings, lectures, or discussion. However, the extent to which students benefit from their observations depends significantly on how much they have prepared for the trip; otherwise, they may fail to observe many activities or misinterpret them because they have not been "primed" to be alert for them. Finally, the value of a field trip is enhanced when follow-up discussion takes place in which students share their observations and learnings and the class is forced to identify career components of the occupations they observed.

Where to Go on Field Trips for Career Education

This depends largely on the availability of community resources, transportation, and time. Some common sites entire classes or small groups can visit include:

- factory
- office building
- health facility
- construction site
- bank
- airport, bus or train station, seaport
- retail store
- personnel office
- Employment Security Office
- laboratory
- bakery, restaurant
- hotel, motel
- recreation site: theater, amusement park, sports facility
- repair shop: cars, appliances
- farms or fishing dock

How to Identify and Contact Places and People to Visit

Many cities and school districts provide a list of companies and agencies that encourage field trips, including times of availability and number of students desired. It is worth contacting your State Department of Education, local Superintendent of Schools or state or school audio-visual department to see if such a list has been compiled. Some localities that do provide lists are:

Los Angeles City Schools
Baltimore City Public Schools
Cuyahoga County Schools (Ohio)
Antioch Unified School District (California)
Marin County Schools (San Rafael, California)
Washington, D.C. Public Schools
Milwaukee Public Schools
New York City Public Schools
Scenectady City School Districts (New York)

Other sources you can contact for help in identifying people and places to visit include:

- students' parents
- school administrators
- Chamber of Commerce
- Rotary Club
- Yellow Pages
- local business organizationa and associations
- Better Business Bureau
- local business organizations and associations
- labor unions

Parents in particular are an excellent source for identifying people and places to visit, because as employed persons themselves (usually), they can often easily arrange for students to take field trips where they work or, at least, put you in touch with responsible persons where they work who can organize a field trip.

Once you have identified people and places to visit, there are several ways to go about contacting them and stimulating their interest in your project. While sending a letter can be helpful, the best approach, where time permits, is (1) send a letter indicating you plan to call for an appointment, (2) telephone to set up a time for an appointment, and (3) make a visit to the responsible official. You may need to combine tact with persistence in locating the appropriate person to talk to and then to encourage him or her to host a field trip. On the other hand, many places will welcome a visit from your students. (See the second resource, Liaison with the Community, for further discussion of these issues.)

When possible, have your students send out letters of introduction to the people they will be visiting.

How to Prepare for a Field Trip

Students should prepare carefully for a field trip by discussion the place and persons they will be visiting, drawing up a list of specific questions to ask the people they will be talking to, and compiling a list of observations they hope to make. The following are sample questions students might ask of an automobile or appliance repair person whose facility they planned to visit.

QUESTIONNAIRE FOR REPAIR PERSONS

1. What is your specific job title? ______

2. In general, what do you do in your job? ______

3. Which of the following skills, if any, are important for you to do a good job?

writing ☐ reading ☐ listening and understanding ☐

oral communication ☐ questioning ☐ notetaking ☐

4. Could you describe why these skills are important to your job? ______

5. Where and how did you learn these skills? ______

6. Do you feel you could have learned them better? ______

7. What other special skills are needed in your job and where did you learn them? ______

8. In general, what advantages and disadvantages does your job offer you? ______

9. Thank you for your time and interest. Before we go, are there any other comments you would like to make about your job?

______

The following is an example of an observation instrument students might develop for use while watching a news reporter at work:

OBSERVATION INSTRUMENT FOR NEWS REPORTER

1. What are the different things the news reporter does? Keep a list of them as you observe on the back of this page.
2. Whenever you see the news reporter using one or more of the following skills, write down next to the skill exactly what he or she is doing that involves using the skill.

SKILLS **NEWS REPORTER'S ACTIVITY**

a. Writing . . . . 1) (For example, an article.)
2) ______________________
3) ______________________
4) ______________________
5) ______________________
6) ______________________

b. Reading . . . . 1) ______________________
2) ______________________
3) ______________________
4) ______________________

c. Editing (making corrections) . . . . 1) ______________________
2) ______________________
3) ______________________

d. Speaking Publicly . . . . 1) ______________________
2) ______________________
3) ______________________

e. Questioning . . . . 1) ______________________
2) ______________________
3) ______________________

f. Taking notes. . . . . 1) ______________________
2) ______________________
3) ______________________

During the field trip, students should observe and listen carefully, ask question, and take notes. After a trip, follow-up discussion is essential to reinforce or supplement learnings and clear up any misunderstandings. Either in small groups or in a class discussion, students can discuss:

- what occupations they observed;
- what they learned about these occupations in terms of training needed to enter them, tasks and responsibilities involved, satisfactions and disadvantages, fringe benefits, salary, and other employment related issues;
- what students hoped to learn but didn't, and where they can find this missing information;
- what interests the trip stimulated that students want to pursue further and how they can do so.

INTERVIEWS

Interviews should be an integral part of a career education curriculum for three reasons:

1. There are many fascinating and informed people in most occupations who are very responsive to the inquiries of students (see next page for potential interviewees).
2. Interviews are an excellent way to obtain firsthand information from people who have experienced career problems or been in direct contact with those who have.
3. There are a variety of opinions on the number of work issues with strong spokespersons for them all of whom students can listen to and question about the bases for their beliefs.

When preparing students for a career related interview:

- allow as many small groups as are interested to conduct interviews and compare findings.
- require the students to study the appropriate career literature about their chosen topic in advance so that they can then draw up a list of critical questions to ask. Some of these questions may seek factual information, but questions, when possible, should deal with areas of controversy or difficult-to-obtain information. Neither the interviewee's nor the students' time should be wasted on questions that can be answered by glancing at a career source book.
- if possible have students follow-up your contact with the interviewee with a letter to arrange an appointment, and request permission to bring a tape recorder;
- mention that how students dress for and how they behave during the interview are often factors that can influence the success of their interview and the potential for future interviews with that source;
- encourage students to begin the interview by asking the interviewee his or her exact title, position and duties. This information is useful to gain an idea of how much credence to place in the interviewee's statements and to help students through the nervous first few minutes;
- instruct each student to take notes independently during and/or immediately after the interview since one "reporter" may not be able to write down everything that is said and different students may interpret what was said differently; and
- encourage students to ask critical but polite questions that probe inconsistencies, hypocrisies, unaccounted for results, successes and failures, and to ask open-ended, as well as specific questions, such as, "What's exciting about your job?"

Upon completion of an interview, the students can:

- evaluate the results in such terms as:
  - What career topics did the interviewee seem most informed about? Why?
  - What new information and ideas about the world of work did you learn?
- report their findings and **critical interpretations** to the class. These reports should always include the groups' **opinions** about what they learned; and
- write up their findings into an article for submission to the school and local community newspapers, if there is time. Permission should first be obtained from the interviewee.

One other type of interview students can conduct is the telephone interview. If interviewees are too busy or inaccessible for person-to-person interviews, they may be agreeable to answering questions over the telephone by appointment secured in advance. Students may also want to interview several persons to compare opinions or attitudes and can use the telephone for this purpose, too.

Types of individuals that students may want to interview include:

- Parents, relatives, and friends
- Personnel or employment security interviewer
- Equal employment opportunity worker
- Manager of major business
- Owner of small business or industry
- Person in authority in large retail organization
- Owner of small retail operation
- Worker in large industry or store
- Worker in small store or shop
- Out of work professional person
- Out of work non-skilled person
- Retired worker
- Union worker
- Worker in non-union situation
- Workers in various clusters: manufacturing, health, recreation, science, etc.
- People who work with other people
- People who work with ideas
- People who work indoors
- People who work out of doors

You can also refer to the section on Field Trips for agencies and businesses whose employees can be interviewed.

POLLS

Polls and questionnaires can be extremely useful and exciting in a career education curriculum. By administering, collating and interpreting polls on careers, students can achieve three career education goals. They can:

1. Learn about the variety of attitudes toward, beliefs about and behaviors in work situations in a realistic and meaningful way;

2. learn to make and understand correlations and thereby realize that opinions and behaviors on career issues can be dependent on age, sex, ethnicity, and other factors; and
3. develop skills in the areas of questioning, communication, validity, writing, and interpretation of data.

Construction of Polls

Students should be encouraged to develop their own polls or questionnaires but should be cautioned to consider several factors when doing so, including:

- phrasing questions in the way most likely to get an honest response in this potentially "touchy" area;
- avoiding questions that require a written response (respondents are often pressed for time, lazy, or afraid of hand-writing detection);
- avoiding too long a poll (for the same reasons);
- assuring respondents of anonymity and seeing to it that the poll in fact cannot reveal names;
- investigating desirable and/or interesting relationships, such as sex, race, age, economic status, and political preference. These relationships, when tabulated after a poll has been taken, are called correlations (e.g., there is a positive correlation between economic position and level of education attained; that is, more middle and upper class people have a college education than do lower middle and lower class people);
- selecting the proper sample of people to be interviewed so that these correlations can be made. If students want to see if women prefer office work more than men, they must be sure to include enough men and women in their poll to make such a comparison;
- deciding how many people should be polled (both conducting the poll and tabulating correlations by hand can take hours);
- testing the poll on the rest of the class to remove the "bugs," such as confusing questions or too limiting a choice of possible responses to check or circle;
- learning what a "representative sample" is, such as 10% of the school body; or .01% of the community––that is, a sample that is large enough to permit the poll taker to generalize about the group being polled; and
- discussing strategies for introducing themselves so that respondents don't refuse to be interviewed (Students might wear large name cards, identifying themselves and their school, for example.)

Administration of Polls

How honestly a world-of-work poll is answered may depend on how it is administered. Some student respondents may be more honest and serious if the poll is administered by other students rather than by a teacher. On the other hand, faculty may answer more honestly if they are given the poll at a staff meeting by the teacher rather than if students stuff faculty mailboxes with the poll. Sometimes it is most effective to have a principal or dean administer the poll to the faculty. Students can also take polls home to their parents and/or knock on doors.

Tabulation and Interpretation of Polls

Students may need help drawing up a matrix to produce their correlations. The teacher should provide this assistance immediately, before students have wasted time making unnecessary tabulations. Sample matrices are:

	Men	Women	College Graduates	High School Graduates	Less than High School	People Job	Thing Job	Idea Job	Ages 18–25	25–45	45–65
Satisfied with job tasks and salary											
Satisfied with salary but not with job											
Satisfied with job tasks but not salary											
Unsatisfied with job tasks and salary											

	Men	Women
Satisfied		
Partly Satisfied		
Unsatisfied		

Students need to be reminded that poll statistics rarely explain **why** certain people hold certain attitudes and beliefs or act in certain ways. It is the researchers' job to **interpret** the findings.

When one or more small groups have conducted the poll, they should explain its results and interpretations to the rest of the class.

Below is an example of what a short poll might look like.

This is a poll drawn up and conducted by students at ________________ School. It is being used as part of a course of study on career education. We would appreciate your honest answers to the following questions. Please do not sign your anme. Thank you.

Age: (Circle appropriate age level)
under 25 25-44 45-64 over 64
Sex: (Circle appropriate sex)
Male Female
Years working on this job: (Circle one)
less than 1 1-2 3-5 6-10 over 10

Circle response with which you agree most.

1. My job salary is satisfying to me.
   agree disagree
2. My job tasks are personally satisfying.
   agree disagree
3. My working hours are:
   too long too short just right
4. I enjoy working with my colleagues:
   a lot some a little not at all

After a poll has been completed and the results analyzed, students should present their findings to the class. They can also submit their results and interpretations as an article to the school or community newspaper. Finally, students can read other polls of adults and students can read other polls of adults and students and compare them with both their own questions and their own findings.

SMALL GROUP DISCUSSIONS

One of the most useful teaching methods for career education is to break classes down into small groups of three to six students for intimate discussions.

Utility of Small Group Discussions for Career Education

There are four major reasons why small group discussions are useful in career education:

1. Small groups offer a more receptive setting than class discussions for students to express their feelings and attitudes about occupations. Students often feel freer to express anger in arguing with a peer than with a teacher and less inclined to hide their real feelings about jobs since they are less likely to try to "con" their friends.

2. There is much more concern in small groups, as opposed to class discussions, with sharing opinions than with impressing you or supplying you with the "right" answer.
3. In small group discussions students can follow the natural flow of their concerns about occupations and work——moving freely from one topic to another, unfettered by feelings that they must stick to one topic only. In addition, small groups offer a better opportunity to follow up arguments than a class setting where 25 students may all want to "chip in."
4. Small group discussions develop several important skill areas needed to become aware, explore, and make decisions about occupations and careers, including cognitive skills (describing, analyzing, questioning, evaluating), affective skills (feeling concerned, feeling responsible, accepting, empathizing), and communication skills (arguing, influencing, listening).

Forming Small Groups

A useful approach to structuring small discussions around career issues is to present students with a problem situation and have them record, in no more than one page, how they would solve the problem. For example, rather than ask students to, "Write your opinion on whether women should have equal rights in the job market," tell students: "You are a state legislator and a vote is being held on the Equal Rights Amendment. How do you vote? Why do you vote that way? Or if you don't vote, why not?"

Two other approaches to obtaining student positions on a career issue are to place them in the position of a "Dear Abby" columnist for a newspaper or of a community hotline answering service. You can ask students to respond to letters seeking advice, such as "Dear Abby, I have always wanted to be a doctor. I get good grades and my teachers say I could do it, but my father says that a girl should take care of the home. He says that if I like medicine I should become a nurse. What shall I do? Bewildered."

These position papers should be written a day or two before the actual small group discussion so you have time to assign students carefully to small groups on the basis of their positions.

Several different considerations need to be balanced in forming the best possible small groups of students to discuss career issues. One alternative is to let the students form their own groups. This may create problems if friends stick with friends, with the results that students are not exposed to different points of view. In addition, introverted students may end up together, resulting in a continuous silence.

A better alternative is for you to make the assignments to the groups. Try to consider the following factors:

- The sex composition should be arranged so that no one is embarrassed by being the only boy or girl in the group, except for boys and girls who don't mind (and even relish) being the only member of their sex in a group.
- All the talkative students should not be clustered in one group and all the silent students in another.
- Each group should be so balanced that conflicting points of view are represented about the career issue being discussed.
- Depending on the class and your own feelings, it is often wise at the outset not to place several discipline problems in the same group.

Arranging the room for small group discussions can be left up to your discretion and the limitations of the facilities available. One useful method is to assign groups to different parts of the room and when they get there have them turn the now unoccupied desks into small circles.

Structuring the Discussions

When you have broken the students into small groups, you can return the position papers and pass out written instructions specifying what the groups are to discuss. These instructions can be put on the chalkboard, if necessary. But some form of **written** directions is advisable.

You can assign the groups at least two tasks.

1. Ask them to try to resolve their differences on the career issue. (E.g., is money more important than job satisfaction in choosing a career?) If they can resolve the issue, they write their common solution on the blank paper. If they cannot agree, they can write down all the different positions they still hold.
2. Also ask them to discuss why they believe that their position is the "correct" one. These reasons can also be recorded. Normally the attempt to resolve different positions involves consideration of why these positions are maintained, but it is useful to instruct the class explicitly to probe into the reasons behind each student's position.

While these discussions are in progress, you can move from group to group listening in, interrupting only when necessary (for example, encouraging a silent group or discouraging truly irrelevant discussion). In particular, watch for a tendency by students to reach agreement at the expense of serious discussion and questioning. You may need to reinforce again and again that students should accept no statements or opinions about work from their classmates without asking them why they believe them, even when there is general agreement. (People often agree on a position for very different reasons.)

Following up the Discussion

At the end of the period, or whenever discussion wanes, collect the papers. At this point, you can pursue at least two options.

1. The small group discussions can be continued in the following class, either around the same issue or some offshoot of that issue that seems to concern the students.
2. A debate can be held between two groups who agree internally but not with each other.

All small group discussions should be followed by informing the class of each group's decisions, preferably by having each group report its results to the rest of the class and then respond to questions and criticisms from the class and the teacher. At times it may be appropriate to ditto the groups' conclusions and pass out a composite set to the class for future reference.

Conclusion

The success of small group discussion depends on many factors, some of which have been enumerated above. Perhaps the most important factor is the selection of issues for discussion that really do concern students. Students should, therefore, help decide what these should be.

CLASS DISCUSSIONS

Normally, if a class can profitably discuss a **controversial** issue as a class, it can discuss the issue more profitably in small groups. Therefore, whenever possible, use small group discussions.

Class discussions are useful, however,

- when a previous activity requires a follow-up discussion to synthesize what took place. For example, a role play always needs follow-up discussion so that different students' perceptions, interpretations and feelings about what took place can be aired and summarized. Small group discussions also should be followed by class discussion so that students can learn and comment on what occurred in other small groups;
- when you feel that the discussion topic is complex and needs your guidance to assist students as they discuss it; and
- when there are not enough talkative students in the class to make active small group discussions feasible.

When these conditions prevail, there is a type of class discussion that can be particularly effective in a curriculum that deals with controversial areas like attitudes toward the world of work. This is **student-directed class discussion.** In this type of class discussion students are trained to address their comments to each other rather than to you. When, for example, you ask whether qualified women should be hired as firefighters, and one student disapproves, the next student comment should be directed at this previous student. In this manner, but at first with constant reminders, you can moderate a discussion so that students communicate **with each other.** If you choose to adopt this approach, you should make it explicit to the students by **telling** them to direct their comments to each other before the discussion begins and **reminding them** to do so whenever necessary. You will soon be able to encourage direct student-to-student communication with a forgetful pupil by a mere wave of the finger in the direction of the other student in the discussion.

You can moderate this kind of class discussion as you see fit, preventing excessive domination by a few students, pointing out circular arguments, and disallowing irrelevancies.

At the end of a class discussion (unless the class discussion was itself a summarizing activity,) students should summarize orally or in writing the major points about the occupational issue that have been made and you should give your general impression of what was achieved.

Class discussions are also useful when there is a class consensus on what could or should be a controversial issue, or when most or all students in a class take a certain point of view for granted and have never examined its underlying rationale. Examples of frequently unexamined points of view include the "superiority" of monogamy, monotheism, capitalism, and the nuclear family. Examples in career education include:

- Labor unions are necessary to protect the worker.
- The owner takes the risk so he should take the profit.
- Education always leads to better jobs and better pay.
- Job satisfaction is not as important as a good salary.
- There are some jobs that women just cannot do and where women do not belong.
- A good job involves staying in one company and "working your way up the ladder."

When a consensus exists on an occupational issue, you can provoke a stimulating class discussion by playing devil's advocate and telling your class, for example, "Women make as good hockey referees as men." As students formulate their rationales––different students may have very different rationales––you can force them to probe deeper and deeper into the foundations of their beliefs. The purpose of this approach is not, of course, to create confusion in the minds of pupils but to require conscious and substantiated rationales for holding strong positions about the world of work.

You may need to make clear to your class that you do not necessarily believe in the position you are advocating to prevent misunderstandings that may result in parent complaints.

PEER TEACHING

Students teaching other students is one of the most productive and exciting learning processes available to schools. Most teachers at one time or another have noticed students and their own children helping each other with homework and other academic problems. In an effective classroom some student-teaching-student activity is always going on, usually in discussions. This approach can be implemented systematically and becomes very useful in a career education curriculum for three principal reasons:

1. The students being taught often learn more efficiently than they otherwise might because:
   - They often trust other students' opinions and statements in controversial areas like career and life plans more than they trust those of adults and are often more willing to express their own opinions more candidly in front of each other than to a teacher.
   - They can often understand other students' explanations better than they can those of adults since the other students speak the same language and, more importantly, have recently gone through the learning process themselves.
2. The students doing the teaching gain new insights into the issues involved and prompted frequently to do more research and thinking in response to student-learner questions and comments.
3. All students involved come to realize that they have resources that they can tap and skills they can share. This facilitates and promotes learnings about the world of work in all areas.

When older students teach younger ones, there are usually scheduling, administration, and sometimes parent concerns about this approach that need to be dealt with to make it successful. These concerns and how they are handled will vary according to each particular school and community. Once they are met, both the lower grade and senior high or college or adult teachers involved will need to consider several other factors:

- The teacher-students must volunteer for the assignments. Compulsory teaching assignments usually produce poor results.
- The teacher-students must have a clear idea of:
  - What they are going to teach about careers. This should involve questioning the student learners to discover **their** concerns about work.
  - How they are going to teach. Options include:

    one-to-one tutoring
    small group discussions
    team teaching
    written materials, homework, etc.

- What their relationship to the student-learners should and should not be. Options include:

  authority figure
  primus inter pares
  pal
  older brother or sister
  counselor

- What the alternatives are to coping with and helping student-learners who express career problems of a personal nature. (E.g., "I'm too dumb to be a doctor.")

- Students must have a reasonable grasp of the career content area and the issues involved prior to teaching, but they should not feel they have to be "experts" in order to help others to learn.

INDEPENDENT STUDY

Independent study, when it flows from student concern, can be **one of two or three best forms of classroom activity** in a career education curriculum primarily because students are bound to have different concerns and independent study **enables different students to pursue career subject areas that pertain specifically to these different needs and concerns.** Activities in which an entire class must participate may ignore the needs and concerns about career of some and perhaps most pupils. Independent study can help to eliminate this handicap to teaching a career education curriculum. In addition, independent study:

- enables students to make their own decisions both about what career topics they study and how they study them. Decision-making by students in areas affecting their own education is crucial to:
  - the development of decision-making skills and the nurturing of feelings of competence, and
  - motivating students to learn about what concerns them;
- frees the teacher to devote more personal and in-depth attention to individual students; and
- enables students to pursue their concerns about specific career issues in greater depth than in classroom activities because they are free to do research using a variety of approaches (polls, reading, interviews, etc.)

REPORTS

Reports are particularly useful in a career education curriculum for:

- giving more depth and meaning to research by organizing and articulating it into a visible medium;
- stimulating critical and intensive thinking about career issues by demanding a high quality final product; and
- training students in methods for finding answers to significant and controversial career questions.

Ideally, students should be allowed to suggest and report on areas of the work world that interest them. You may want to provide a list of suggested topics.

Places and agencies to contact that may offer research possibilities (literature, interviews, etc.) include:

1. State and city agencies:

   Bureau of Employment Security
   Bureau of Labor Statistics
   Manpower Development Authority

2. Local groups:

   Chamber of Commerce
   Fraternal Organizations, e.g., Rotary, Lions, etc.
   Business and Industrial Professional Associations
   Unions

3. Miscellaneous:

   Newspaper Want Ads
   Employment Agencies
   Personnel Offices
   Leaders in Industry, Commerce
   Yellow Pages

Students should be given a set of written instructions on report research and presentation appropriate to their ability level that consider the following areas.

- notetaking: instruct students in the steps to follow in note-taking. Students develop questions about their subject which are then changed into phrases or statements. These phrases or statements are used as guides or headings for the notetaking process.
- sources: students should be taught to go beyond the use of encyclopedias in conducting their research, to use other reading material and research methods (interviews, polls, etc.). While frequently written by experts, encyclopedias offer only one perspective on a problem, while much of the information needed in a career education curriculum may not be up to date or found at all in encyclopedias. If, however, there is little material available on a chosen topic, the subject should be abandoned and a new one found.
- outlining: students organize their notes, using the headings for each topic, in a logical order. Students check each other's work to see if it makes sense and is logical.
- display: an important part of the students' presentation is the display or visual portion. It is this part of the report that will hold the class' attention and make the oral report (if there is to be one) go more smoothly. These visual materials (graphs, charts, maps, pictures, cards, models) should highlight and make important points clear.
- oral and/or written report: if the report is oral, it should be no more than 10-15 minutes in length and only notes on index cards are used for reference. If the report is written, its length may be left up to the student as long as it says what needs to be said. The visual display, however, is an integral part of both presentations and should be used appropriately.
- bibliography: both types of research should contain a bibliography. The purpose of a bibliography needs to be stressed: to enable the reader to find further literature references for pursuing his own interests.

All reports should be presented orally, even if they were not done initially as an oral-visual report. If the report was worth writing, it is probably worth reading. Although some students may write or prepare very poor reports, they may still be worth presenting so that other students can suggest ways to improve them. Students should also be given a chance to discuss their reports in small groups centered around topics of common interest, or as a class.

WRITING

It is useful for students to write frequently in a career education curriculum for two basic reasons:

1. Writing stimulates intensive, creative and critical thinking about issues in a way that is often inadequately developed in verbal interchange.
2. Writing creates an opportunity for students to read what their classmates have written and this, in turn, helps the class become aware that **students** have important, interesting and informative ideas to communicate.

In a career education curriculum there are several useful writing modes for students to engage in:

- Position papers stating and defending their stand on a career or occupational issue
- Imaginary "handbooks" that offer descriptions of career opportunities
- Imaginary dialogues and interviews between individuals who hold opposing points of view on career issues
- Reports (see section on Research Reports)
- Autobiographical and biographical narratives, both real and fictional
- Story completions (beginnings, middles or endings).

Since the major objective of this type of writing is to elicit student feelings and opinions, you may want to explicitly inform students that grammar and/or spelling will not be corrected. Attention focused on these areas often distracts students from the career issue being discussed and inhibits them from expressing their real opinions and feelings on future written exercises. Rather than risk criticisms of spelling and grammar errors, many students will often write very little, use only words they are sure they can spell, or both.

Try to avoid commenting on students' opinions on career issues in such terms as "that's a good idea," "good," "I agree," "I think you're wrong." When this is done, students become habituated to writing opinions and ideas they think you want to read, rather than what they truly believe. However, students do need to be commended and corrected in terms of their argumentative **techniques.** Students should be criticized on the basis of:

- whether they **supported** their opinions with logic and facts, or at least said their position could not be logically or factually defended;
- whether they took into account and "disposed of" arguments and considerations that **run counter** to their agruments and opinions; and
- whether they have made **untrue** statements.

Student writing is most productive when your attention is focused on whether opinions have been adequately defended rather than on whether you agree or disagree with them.

INDEX OF ACTIVITIES

1. **ASSEMBLE AND PRODUCE:** The class becomes an assembly line; each student is assigned a specific task.
2. **CUT, PASTE, AND CRANK THAT CRANE:** Class makes a collage from pictures of construction workers, then simulates the job of a crane operator.
3. **HANGING TOGETHER:** Students make "mobiles" depicting various industries and jobs, and the people it takes to make them work.
4. **HELP! FIRE! POLICE!:** Class visits the local fire and/or police department, then role plays and discusses various situations based on the visit.
5. **GIVE THAT LETTER A HAND:** The class traces the path of a letter by visiting a local post office.
6. **OCCUPACS:** Students make their occupational learning kits for class use.
7. **HOME IS WHERE THE HOMEMAKER IS:** Students observe and interview their family homemaker, gather data, and draw conclusions about this occupation.
8. **JOB BANK:** The class compiles a "job bank" based on interviews with parents.
9. **"GOOD NIGHT, CHET," "GOOD NIGHT, DAVID":** The class studies television news format and uses it to present current events.
10. **TAKE A TRIP:** The class solves a travel problem acting as a travel agent or tour guide, then role plays the various solutions.
11. **"HOBO":** Card game for 2-5 students which asks the players to match an occupation with a tool or ojbect representative of that occupation.
12. **"I AM ME":** Students make "I Am Me" books which express personal feelings and attitudes.
13. **SHARE AND TEACH:** Students explain and/or teach the skills involved in a hobby or a special area.
14. **HARD HATS:** Students learn about the construction industry, observing and interviewing workers employed in these occupations.
15. **ASSOCIATION:** A game played by teams, the object of which is to guess the tool or object being described and the occupation associated with it.
16. **A COMMUNITY PROBLEM:** Class produces a play about community service workers.
17. **HIRING FOR JOBS IN MOTION:** Students choose a transportation mode, research career opportunities in that mode, and simulate a company personnel department "hiring" applicants to work in that business.
18. **"WHAT'S MY LINE?":** Students research occupations and play the game "What's My Line?".
19. **BORROW A BOOK:** The class learns about library procedures and applies them by setting up and maintaining a classroom library.
20. **TO SERVE YOU BETTER:** Students survey parents and neighbors to discover need and use for people in service trades.
21. **MA BELLE:** Class plays game, similar to Bingo, using telephone numbers.
22. **EARTH MOVERS:** Students observe large equipment operators at a construction site and explore the skills involved in operating this type of equipment.

23. **OCCUPATIONAL SETS:** Students play a game with occupational flash cards, drawing sets of tools/objects associated with a particular occupation.

24. **OH FUDGE!:** Students visit a bakery or commercial kitchen and hold a class bake sale.

25. **BANK IT:** Class learns about banking procedures, sets up its own bank and operates it.

26. **TRAVEL, TIME AND MONEY:** Acting as travel agents, students arrange trips via different modes of passenger transportation.

27. **HEALTH MEASURES:** Students learn about various health professions by visiting the school nurse and maintaining their own health records.

28. **SOLVING JOB PROBLEMS:** Students are given budgeting problems to solve and defend.

29. **WINNING AT MATH:** Students play a team game answering mathematics questions relevant to various occupations.

30. **MATH ON THE JOB:** Students survey parents and neighbors and make observations on the use of math in occupations in their community.

31. **CLASSIFY, CATEGORIZE, AND ORDER:** Students discover use of classification in everyday situations.

32. **JOB AID:** Students learn first aid techniques.

33. **ROLL IT:** Class takes a field trip to observe the extensive use of "wheels" in the community.

34. **CALORIES COUNT:** Students evaluate their eating habits and plan well balanced meals.

35. **WEATHERING THE STORM:** Class visits a farm to learn how people cope with weather conditions.

36. **PHYSICAL FITNESS:** Health professionals discuss their occupations with the class; students relate this information to health problems.

37. **THE ELECTRIC COMPANY:** Students survey their neighborhoods, homes, and school to assess the impact of electricity.

38. **PLANT A TREE, SAVE A TREE:** Class learns about the use and care of natural resources, then deals with community landscape problems.

39. **PROBLEM SOLVERS:** Students are given a community or public problem to solve.

40. **EARTH, AIR, AND WATER:** In groups the class writes to various agencies and organizations to gather information on pollution and then applies it to the community.

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